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ABSTRACT

This guide lists resource materials that address agricultural occupational injuries and diseases and their prevention. Many of the entries were derived from the AGRICOLA database produced by the National Agricultural Library and include journal articles, books, government reports, training materials, and audiovisual materials. The first section lists 227 publications concerning general information on agricultural safety; statistics and research methods; emergency care and rescue; health education and prevention; occupational accidents among children and youth; occupational risk sources including animal, auditory, cancer, chemical, dermatological, electrical, machinery, respiratory, stress, thermal, and water; and rehabilitation of disabled agricultural workers. The second sections lists 47 audiovisual materials related to general information on agricultural safety; rescue and emergency care; occupational accidents among children and youth; occupational risks factors including chemical, electrical, and machinery; and rehabilitation of disabled agricultural workers. Each entry contains title, author, publisher, publication date, journal or conference information (where appropriate), National Agricultural Library (NAL) call number, availability information for documents not found through NAL, and annotation. The last section of the guide provides contact information and descriptions of national and regional agricultural safety and health organizations. (LP)

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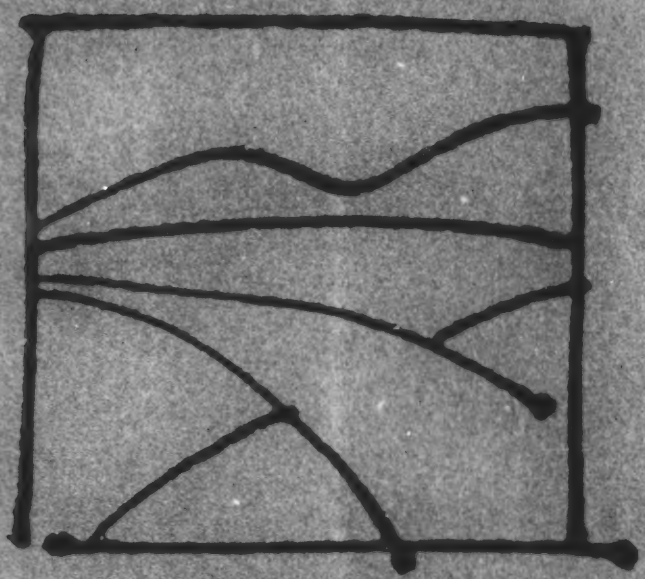

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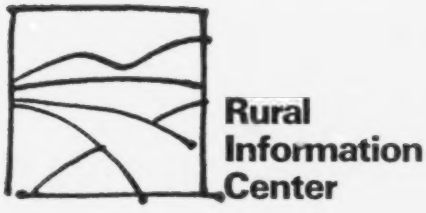
Agricultural Safety and Health: A Resource Guide

Compiled by Joy Zimmerman
Rural Information Center

Rural Information Center Publication Series, No. 40
Revised Edition



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FOREWORD

We are pleased to present this guide, *Agricultural Safety and Health: A Resource Guide,* which was prepared by the Rural Information Center Health Service (RICHS) of the NAL's Rural Information Center, and supported by the Office of Rural Health Policy, DHHS. Both agencies are committed to seeking solutions to health care problems in rural America.

The loss of our farmers and farmworkers to work-related disease and injury is one of the most critical health issues facing the nation. The incidence of agriculturally-related fatalities, disabling injuries, and disease makes agriculture one of the nation's most dangerous occupations.

This publication is intended as a resource for farmers and farmworkers, extension agents, researchers, policymakers, and health personnel. The books, articles, reports, training materials, and audiovisual materials referenced in this guide address agricultural occupational injuries and disease, and their prevention. The guide also provides a list of national and regional organizations involved in agricultural safety and health.

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National Agricultural Library
U.S. Department of Agriculture

Jeffrey Human
Director
Office of Rural Health Policy
U.S. Department of Health
and Human Services

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This publication contains material that is considered accurate, readable and available. The opinions expressed in this publication do not necessarily reflect the views of the United States Department of Agriculture. Inclusion of publications and software databases in this publication does not imply product endorsement.

INTRODUCTION

Agriculture is one of our nation's most dangerous occupations. The National Safety Council estimates that farm injuries claim the lives of more than 1,100 farmers and ranchers each year. An additional 130,000 agricultural workers are injured, half of them permanently.

Since the farm is often a home as well as a workplace, farm and migrant family members are also exposed to this hazardous environment. It has been estimated that 300 children and adolescents die each year from farm accidents, and an additional 27,000 are injured (Rivara, 1990). Agricultural workers and family members are also at risk for agriculturally-related diseases, respiratory disorders, dermatitis, noise-induced hearing loss, certain cancers, musculoskeletal disorders, and reproductive disorders.

If progress is to be made in improving the health and safety of the agricultural workforce, occupational risks and preventive techniques must be understood by agricultural workers, their families, and the health personnel who treat them.

This list of references, while not exhaustive, includes information on various aspects of agricultural safety and health. The first section covers general information, statistics and research methods, emergency care and rescue, education and prevention, children and youth, occupational risks and interventions, and rehabilitation. The second section lists audiovisual materials by category, and the final section provides contact information and descriptions of national and regional agricultural safety and health organizations.

Most documents have National Agricultural Library (NAL) call numbers. See the NAL Document Delivery information on the last page. The cited references may also be obtained through a public library or a local or regional medical library. Contact information is provided for documents that are not in major journals or cannot be found at NAL.

PUBLICATIONS: General Information

1

1992 Migrant Health Centers Referral Directory. C. Yvonne Dailey, editor. Austin, TX: National Migrant Resource Program, Inc., 1992. 142 p. Available from National Clearinghouse for Primary Care Information, 8201 Greensboro Drive, Suite 600, McLean, VA 22102, 703/821-8955, ext 248.

This directory lists migrant health facilities nationwide, Public Health Service officials and regions, and national and state maps with facility locations. The appendices include contact information for related associations and committees.

2

1993 Program Facts: The National Program for Occupational Safety and Health in Agriculture. Washington, D.C.: National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention, Public Health Service, DHHS, 1993. 216 p. Available from NIOSH Publications, Mail Stop C-13, 4676 Columbia Parkway, Cincinnati, OH 45226-1998, 800/35-NIOSH.

This publication contains information on the National Institute for Occupational Safety and Health (NIOSH) program to prevent work-related disease and injuries in agriculture. Descriptions of 109 projects and seven cooperative agreements in 27 states are listed.

3

"Agricultural Hazards in North Carolina." J. Bernhardt and R.L. Langley. *North Carolina Medical Journal*, Vol. 54(10), October 1993, pp. 512-515.

The authors review health hazards facing agricultural workers, including traumatic injuries, hearing loss and problems due to vibration, dermatoses, respiratory problems, zoonotic diseases, chemical hazards, and cancer. The unique health problems of migrant and seasonal farmworkers are also discussed.

4

AFBF Safety Catalog. Park Ridge, IL: American Farm Bureau Federation, 1992. 22 p. Available from Mark Landmark, American Farm Bureau Federation, 225 Touhy Avenue, Park Ridge, IL 60068, 312/399-5700.

This catalog lists a variety of farm safety publications and audiovisual materials that state Farm Bureau safety coordinators often have. Contact your state safety coordinator for availability information. These coordinators are generally located in the capital city of your state.

5

"Agricultural Injuries." J.A. Merchant. *Occupational Medicine: State of the Art Reviews*, Vol. 6(3), July-September 1991, pp. 529-539.

This article reviews the epidemiology of agricultural injuries as well as various surveillance systems that are used to track agricultural injuries. The author also discusses prevention efforts, including the development of the National Coalition for Agricultural Safety and Health (N-CASH).

6

"America's Deadly Harvest." D.G. Lowery and N. Dorman-Hickson. *Progressive Farmer*, Vol. 105(9), September 1990, pp. 25-31. NAL Call No.: S1.P7.

This article provides photos and summaries of men, women, and children who were killed in farming accidents in October 1989. Family members of the victims advise farmers to know their machinery's limitations, know their own limitations, use common sense, and use a buddy system.

7

"Better Safe." H. Aponte. *Sun Diamond Grower*, Vol. 6(3), Fall 1987, pp. 34-35. NAL Call No.: SB401.A1D5.

This short article reviews agricultural safety issues and presents strategies for promoting safety, including effective training programs, proper tractor operation, and safe clothing. The article also lists agricultural safety resources, although most are specific to California.

8

"Cost of Farm and Rural Injuries." M.A. Purschwitz and W.E. Field. *Public Health Reports*, Vol. 102(6), November-December 1987, pp. 642-644. NAL Call No.: 151.65 P96.

The authors discuss the amount that the government has spent on farm safety programs and the causes and costs of agricultural accidents. Recommendations for reducing the losses associated with farm accidents are included.

9

"The Deadliest Profession." M. Gaige. *Farm Journal*, Vol. 112(11), September 1988, pp. 17-19. NAL Call No.: 6 F2212.

Arguing that insufficient attention is given to the issue of farm safety, the author compares the funding for farm safety with the funding for other industries. The article also discusses the difficulty of collecting farm accident statistics and the incidence of farm accidents among children. The accounts of a fatal and a nearly fatal accident are included.

10

"Farm Accidents and Injuries Among Farm Families and Workers: A Pilot Study." P.H. Cummings. *American Association of Occupational Health Nurses Journal*, Vol. 39(9), September 1991, pp. 409-415.

To examine and update information on accidents among farm families and workers, a one-year pilot study was undertaken in a representative farm county in South Carolina. Since traditional methods of collecting these data are difficult and time-consuming, the author developed a questionnaire which was mailed to farmers. He concluded, however, that this method is ineffective since farmers are often hesitant to report accidents.

11

"Farm Injuries: How Can the Family Farm Be Made a Safer Place?" S. Sterner. *Postgraduate Medicine*, Vol. 90(2), August 1991, pp. 141-2, 147, 150.

This article provides an overview of typical farm injuries, including tractor, farm animal, combine, power take-off, grain auger, silo, chemical, and electrical injuries. Farm injuries to children, wounds from farm injuries, and preventive measures are also discussed.

12

"Farm Product Prices and Agricultural Safety: Connections and Consequences." T.W. Kelsey. *The Journal of Rural Health*, Vol. 8(1), Winter 1992, pp. 52-59.

In this article the author examines the connection between high farm product prices and agricultural injury rates. Using data from 1969 to 1987, the author determined the agricultural economy has little effect on the underlying causes of agricultural injuries.

13

"Farm Safety and Federal Responses to Occupational Health." T.W. Kelsey. *The Journal of Rural Health*, Vol. 7(3), Summer 1991, pp. 287-292. NAL Call No.: RA771.A1J68.

The author discusses recent agricultural safety history and the conflicting interests of safety policies. The federal response to farm safety is complicated by the fact that most farmers who would be protected by safety regulations would also be restricted by them.

14

A Farm Safety Program Sponsored by Farmers. Arnold Skromme. *Paper (American Society of Agricultural Engineers)*, 90-1621. St. Joseph, MI: American Society of Agricultural Engineers, 1990. 32 p. Available from American Society of Agricultural Engineers, 2950 Niles Road, St. Joseph, MI 49085, 616/428-6324.

This paper reviews accident data from other industrialized countries, reasons for the agricultural death rate in the United States, and actions that could be taken to

reduce the death rate. The author also includes lists of potential research projects and new or revised ASAE standards.

15
"Farmworker Occupational Health and Safety in the 1990s." V. Wilk and D.M. Hancock. *New Solutions*, Vol. 1(4), Spring 1991, pp. 6-10.

This article discusses issues facing farmworkers such as economic and workplace health and safety inequities. These inequities include significant exclusions under the Fair Labor Standards Act, the lack of "Workplace Right To Know" standards regarding pesticide use, and less stringent workplace safety protections for children.

16
"Farming: A Hazardous Occupation." D.H. Cordes and D.F. Rea. *Occupational Medicine: State of the Art Reviews*, Vol. 6(3), July-September 1991, pp. 327-334.

This article discusses the unique characteristics that contribute to health risks. These characteristics include worker traits and behavior, work setting, and organizational structure. The authors give an overview of agricultural health and safety topics and recommended reading.

17
"The Health Effects of Agricultural Production." M.J. Coye. In *New Directions for Agriculture and Agricultural Research: Neglected Dimensions and Emerging Alternatives*. K.A. Dahlberg, editor. Totowa, NJ: Rowman & Allanheld, 1986, pp. 165-198. NAL Call No.: S541.N49.

This chapter discusses the changes in agricultural production processes and their effects on the health of agricultural workers and the general public. The need for integrating public health concerns and agricultural research and development is also presented.

18
"The Health of Migrant Farm Workers." J.S. Meister. *Occupational Medicine: State of the Art Reviews*, Vol. 6(3), July-September 1991, pp. 503-518.

This article examines the characteristics and health status of migrant farm workers. The author reviews data on migrant health issues, including pesticides, cancer, and hazards to mothers, children, and fetuses. The author also examines migrant labor laws and recommendations for improvements in migrant health. The Arizona Farmworker Health History questionnaire is included.

19
"Health Risks in Agriculture." J.M. Geller and R.L. Ludtke. In *Rural Health Nursing*. Angeline Bushy, editor. Beverly Hills, CA: Sage Publications, Vol. 1, 1991, pp. 334-347.

This chapter provides an overview of various types of health risks in agriculture. These include accidents, diseases or ailments from hazards in the farm environment, and risks due to limited access to the health care system.

20
"Health and Safety Hazards Associated with Farming." J.K. Ehlers, C. Connon, C.L. Themann, J.R. Myers, and T. Ballard. *AAOHN Journal*, Vol. 41(9), September 1993, pp. 414-421.

This article gives an overview of agricultural health and safety hazards, including noise, machinery, chemical and respiratory dangers, communicable disease hazards, and psychosocial factors. A list of agricultural health and safety resources is included.

21
"Health Status of Migrant Farmworkers: A Literature Review and Commentary." G.S. Rust. *American Journal of Public Health*, Vol. 80 (10), 1990, pp. 1213-1217.

After reviewing the medical literature on migrant farmworkers, the author concluded that there are sig-

nificant gaps in existing information on the health status of this population. The author also found that estimates of migrant and seasonal farmworkers vary considerably, and he encourages more research on migrant health.

22

Hired Farmworkers: Health and Well-Being at Risk. Washington, D.C.: U.S. General Accounting Office, 1992. 31 p. HRD-92-46. Available from U.S. General Accounting Office, P.O. 6015, Gaithersburg, MD 20877, 202/512-6000.

This publication investigates the extent to which current federal laws, regulations, and programs protect the health and well-being of hired farmworkers. The findings indicated that farmworkers have inadequate protection from pesticides, inadequate field sanitation, and less protection for their children on farms. Farmworkers' medical needs are not met by federal health care programs, and they receive fewer Social Security benefits.

23

"Injuries in Agriculture: A Review of the Literature." B. Jansson. *International Journal of Environmental Studies*, Vol. 33(1), 1989, pp. 45-52. NAL Call No.: QH540.I55.

To promote the transfer of knowledge about agricultural safety between countries, the author reviewed literature from the Nordic countries, Europe, United States, Canada, and other countries. The reference list is extensive and demonstrates different approaches and levels of interest among various countries.

24

"Issues in Agricultural Health and Safety." J.J. May. *American Journal of Industrial Medicine*, Vol. 18(2), 1990, pp. 121-131.

This review of health and safety issues in agriculture indicates that the leading cause of farm fatalities is farm machinery. Of this machinery, tractors were most frequently involved in accidents. The article also discusses chronic traumatic injuries, suicide, respiratory illnesses, and skin problems.

25

"Management of Agricultural Injuries and Illnesses." K.A. Wright. *Nursing Clinics of North America*, Vol. 28(1), March 1993, pp. 253-266.

The author examines the management of common agricultural illnesses and injuries, including noise-induced hearing loss, impairment from anhydrous ammonia fertilizer and agricultural chemicals, respiratory diseases, traumatic farm injuries, and mental disease.

26

Migrant Farmworkers in the United States. Implementation of the Helsinki Accords. Briefings of the Commission on Security and Cooperation in Europe. Washington, D.C.: Commission on Security and Cooperation in Europe, 1993. 458 p. NAL Call No.: HD1525.M54 1993.

The Commission on Security and Cooperation in Europe held five briefings on migrant farmworker issues as part of a review of U.S. compliance with the Helsinki Accords. The topics included the status of migrant farmworkers, living conditions, health and safety concerns, children's and women's issues, and Commission recommendations.

27

NIOSH Agriculture Bibliography. Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health (NIOSH), 1992. 43 p. Available from NIOSH Publications, Mail Stop C-13, 4676 Columbia Parkway, Cincinnati, OH 45226-1998, 800/35-NIOSH.

This bibliography is a selected list of NIOSH publications on agriculture. The publications are arranged by type and include contract and grant reports, technical assistance reports, journal articles, and book chapters.

28
NIOSH Recommendations for Occupational Safety and Health. Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, NIOSH, 1992. 208 p. Publication No. 92-100. Available from NIOSH Publications, Mail Stop C-13, 4676 Columbia Parkway, Cincinnati, OH 45226-1998, 800/35-NIOSH.

This publication is a compendium of NIOSH policy documents and statements. It includes NIOSH safety and health recommendations for hazardous agents and physical hazards in the workplace as well as recommendations for industries, processes, and work environments. The appendices include classes of chemicals and categories of pesticides.

29
The Occupational Health of Migrant and Seasonal Farmworkers in the United States. Valerie A. Wilk. Washington, D.C.: Farmworker Justice Fund, Inc., 1986. 125 p. NAL Call No.: RC965.A5W55.

This report reviews data on the health status of farmworkers and outlines recommendations for research and program priorities. The occupational health problems discussed include communicable diseases, urinary tract infections, heat stress, pesticide-related illnesses, dermatitis, eye problems, musculoskeletal problems, accidents, noninfectious respiratory diseases, cancer, and maternal and child health hazards. The report also reviews occupational safety and health laws affecting farmworkers. A report summary is also available.

30
"Occupational Health and the Rural Worker: Agriculture, Mining, and Logging." D.S. Pratt. *The Journal of Rural Health*, Vol. 6(4), October 1990, pp. 399-417. NAL Call No.: RA771.A1J68.

The article discusses the health status of migrant farmworkers, the acute and chronic effects of pesticides, farm injuries, stress, respiratory illness, and issues for the logging and mining industry. The author encourages additional research in these areas.

31
"Occupational Infections in Farm Workers." E.W. Kligman, W.F. Peate, and D.H. Cordes. *Occupational Medicine: State of the Art Reviews*, Vol. 6(3), July-September 1991, pp. 429-446.

This article discusses prevention and control of occupational infections among agricultural workers, including personal protective gear, education, workplace modifications, and animal control practices. The authors recommend that physicians incorporate risk assessments into their routine examinations. Descriptions of the eleven most common infections are included.

32
Papers and Proceedings of the Surgeon General's Conference on Agricultural Safety and Health. Melvin L. Myers and others, editors. Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, NIOSH, 1992. 645 p. Publication No. 92-105. Available from NIOSH Publications, Mail Stop C-13, 4676 Columbia Parkway, Cincinnati, OH 45226-1998, 800/35-NIOSH.

This publication includes the numerous papers and proceedings of the Surgeon General's Conference on Agricultural Safety and Health held in the spring of 1991. The conference addressed surveillance, research, and intervention issues as well as the elements of a national agenda. The publication also includes poster abstracts on a variety of topics and a list of participants.

33
"Perils in the Fields." R.B. Smith. *Occupational Health and Safety*, Vol. 62(5), May 1993, pp. 76-80.

The author reviews tractor rollovers, respiratory hazards, and other agricultural safety and health problems. Possible solutions are discussed along with the additional hazards that migrant farmworkers and children face.

34

"Policy and Institutional Challenges for Agromedicine." W.J. Jones and J.A. Johnson. *Journal of Agromedicine*, Vol. 1(1), 1994, pp. 93-110.

The agromedicine model incorporates health, agriculture, and the environment. The authors discuss the sociopolitical environment of agromedicine and agromedical challenges for the 1990s, which include the agricultural lifestyle, agricultural safety and health, and consumer education.

35

Principles of Health and Safety in Agriculture. James A. Dosman and Donald W. Cockcroft. Boca Raton, FL: CRC Press, 1989. 421 p. NAL Call No.: RC965.A5P75.

This publication includes over 100 articles on respiratory risks, grain dusts, occupational asthma, environmental assessment, health promotion, pesticide toxicology, cancer risks, dermatoses and zoonoses, principles of safety, injuries, and mental health.

36

A Report to the Nation: Agricultural Occupational and Environmental Health: Policy Strategies for the Future. James A. Merchant and others, editors. Iowa City, IA: National Coalition for Agricultural Safety and Health, 1988. 67 p. Available from Conference Secretary, Institute of Agricultural Medicine and Occupational Health, University of Iowa, Iowa City, IA 52242-5000, 319/335-4427.

This report, also known as "Agriculture at Risk," summarizes the proceedings of a 1988 national conference on environmental and agricultural safety and health which involved 170 scientists and policymakers. Summaries of scientific papers and numerous policy recommendations are included.

37

"The Role of the Agricultural Health Nurse: Bringing Together Community and Occupational Health." S.A. Randolph and A.A. Migliozzi. *AAOHN Journal*, Vol. 41(9), September 1993, pp. 429-433.

The authors discuss the emerging role of the agricultural health nurse which combines community health and occupational health nursing. The agricultural health nurse uses community-based strategies to develop agricultural safety and health programs.

38

"Safety Spending: Is Agriculture Being Shortchanged?" M.A. Purschwitz and W. E. Field. *Agricultural Engineering*, Vol. 69(7), November-December 1988, pp. 10-18. NAL Call No.: 58.8 AG83.

This article discusses the current level of federal spending for agricultural safety programs and compares it to the spending for other industries. The authors recommend that spending levels be more proportional to the incidence of injury and death.

39

A Summary of Federal Laws and Regulations Affecting Agricultural Employers, 1992. Jack L. Runyan. Washington, D.C.: Economic Research Service, U.S. Department of Agriculture, 1992. 30 p. Agriculture Information Bulletin No. 652. NAL Call No.: 1 Ag84Ab No. 652.

Many of the farms in the United States use hired labor. This publication reviews the numerous federal laws and regulations that affect the employment, taxes, wages, and working conditions of these workers. A list of additional resources is included.

40

A Summary of the Worker Protection Standard for Agricultural Pesticides. Jack L. Runyan. Washington, D.C.: Economic Research Service, U.S. Department of Agriculture, 1993. 10 p. Agriculture Information Bulletin No. 680. NAL Call No.: 1 Ag84Ab No. 680.

A supplement to *A Summary of Federal Laws and Regulations Affecting Agricultural Employers, 1992*, this publication summarizes the U.S. Environmental

Protection Agency's (EPA) worker protection standard. The author includes a list of exemptions.

41
"Technical Workshop Report: Working Group I: Occupational Health and Safety Strategies for Agriculture." J.A. Dosman. *American Journal of Industrial Medicine,* Vol. 18(3), 1990, pp. 353-6.

Based on a review of major agricultural safety and health issues, this working group outlined specific health maintenance strategies. One of the recommendations is multidisciplinary program development that involves the local community, state government, universities, farm organizations, and industry.

42
"Technical Workshop Report: Working Group II: Agricultural Occupational Health and Safety Services for Farmers and Ranchers." G. Osweiler. *American Journal of Industrial Medicine*, Vol. 18(4), 1990, pp. 511-5.

Among the recommendations of this working group for improving agricultural safety and health services is the development and implementation of educational programs that involve the farm community and local resources. Marketing, surveillance, and program evaluation are essential components of any program. A discussion of regulatory options is included.

43
Third International Symposium: Issues in Health, Safety and Agriculture: Abstracts. Saskatoon, Saskatchewan, Canada: Centre for Agricultural Medicine, University of Saskatchewan, 1992. 201 p. Available from Centre for Agricultural Medicine, Royal University Hospital, Saskatoon, Saskatchewan, Canada S7N 070, 306/966-8288.

This publication contains the abstracts from the Third International Symposium: Issues in Health, Safety and Agriculture that was held in May 1992. The topics included respiratory problems, cardiovascular health, pesticides, injuries and safety, hearing loss, and cancer risks.

44
"Toward Agricultural Safety and Health." P.R. Cook. *Missouri Medicine*, Vol. 90(1), January 1993, pp. 24-26.

The purpose of this article is to give health personnel an overview of the wide range of agricultural health and safety issues. The author recommends education and prevention strategies for improving agricultural safety and health.

45
"Women and Agricultural Work." L. Engberg. *Occupational Medicine: State of the Art Reviews*, Vol. 8(4), October-December 1993, pp. 869-882.

Women play a significant role in agricultural production. The author discusses farm women's involvement in farm and home tasks as well as the numerous biological, chemical, physical, and mechanical hazards that they face.

- *Explore* is a CD-ROM which lists over 1,200 Missouri Extension publications, including agricultural safety and health materials. Copies are available from DeeAnna Adkins, 1-98 Agricultural Building, University of Missouri, Columbia, MO 65211, 314/882-6528.

PUBLICATIONS: Statistics/Research Methods

46

Accident Facts. Chicago, IL: National Safety Council, 1990 edition. 108 p. NSC, 02170-0000. NAL Call No.: 289.69 N21.

This annual publication provides national statistics on the number, causes, and costs of accidental deaths. A section on farm resident accidents is included.

47

"Accidental Occupational Farm Fatalities in North Carolina: 1984 to 1988." J.H. Bernhardt and R.L. Langley. *The Journal of Rural Health*, Vol. 8(1), Winter 1992, pp. 60-69. NAL Call No.: RA771.A1J68.

The authors conducted a survey of farm fatalities using medical examiner reports and death certificates in North Carolina from 1984 to 1988. The purpose of the study was to determine the number and circumstances of deaths due to occupational farm injuries using an existing database to accurately identify only farm fatalities. Their findings indicated a death rate of 41/100,000 agricultural workers.

48

"Agricultural Injuries Among a Population-Based Sample of Farm Operators in Alabama." C. Zhou and J.M. Roseman. *American Journal of Industrial Medicine*, Vol. 25(3), March 1994, pp. 385-402.

The authors conducted a population-based study of nonfatal agricultural injuries among Alabama farmers to determine the incidence and severity of these injuries as well as potential risk factors. Machinery, falls, and animals were the leading external causes of injuries, and the primary risk factors included younger age, farm ownership, and prior residual injury.

49

"Agricultural Injury Surveillance: Occupational Health Nurse's Role." S.K. Jones. *AAOHN Journal*, Vol.41(9), September 1993, pp. 434-436.

This article gives an overview of the Iowa Sentinel Project Researching Agricultural Injury Notification Systems (SPRAINS), an injury surveillance and prevention project. The SPRAINS data revealed that agriculture is the deadliest occupation in Iowa, the first state to require statewide reporting of agricultural injuries for developing interventions.

50

"Beyond Surveillance: Prospects for Analytic Studies for Agricultural Injuries." P.M. Layde. *American Journal of Industrial Medicine*, Vol. 18(4), 1990, pp. 193-200.

This article reviews the basis of current knowledge about agricultural injuries, discusses the methodologic barriers to analytic studies, and suggests ways to address these barriers. The author argues that a major obstacle is the lack of data on the causes and risks associated with agricultural injuries.

51

"Comparison of Two Methodologies to Measure Agricultural Occupational Fatalities." D.J. Murphy, B.L. Seltzer, and C.E. Yesalis. *American Journal of Public Health*, Vol. 80(20), February 1990, pp. 198-200. NAL Call No.: 449.9 AM3J.

Using data from 1985-1987 in Pennsylvania, the authors compared agricultural fatalities from the National Traumatic Occupational Fatality System of NIOSH with alternative systems. The article discusses the differences in the statistics and the reasons for these differences.

52
"The Dangers of Dairy Farming: The Injury Experience of 600 Workers Followed for Two Years." D.S. Pratt, L.H. Marvel, D. Darrow, L. Stallones, J.J. May, and P. Jenkins. *American Journal of Industrial Medicine*, Vol. 21(5), 1992, pp. 637-650.

The purpose of this study was to assess the injury rate of central New York dairy farmers. The authors conducted a two-year study of 600 farm workers on 201 dairy farms. Their findings indicate that owners or operators of farms, older workers, and those with more experience and heavier workloads were most often injured. The authors argue that other studies may have underestimated the risks that farmers face.

53
"Epidemiology of Farm Injuries." P.M. Layde. *The Marshfield Clinic Bulletin*, Vol. 2(20), Spring 1989, pp. 4-12.

This article discusses the epidemiology of farm injuries and their circumstances and characteristics. Prospects for prevention are presented, including the role of rural physicians in influencing the safety behavior of farmers.

54
Epidemiology of Farm-Related Injuries: Bibliography with Abstracts. David L. Nordstrom, Laura Brand, and Peter M. Layde. Marshfield, WI: Marshfield Medical Research Foundation, 1992. 206 p. Purchase Order No. 91-39822. Available from Publications Dissemination, DSDTT, NIOSH, 4676 Columbia Parkway, Cincinnati, OH 45226, 800/356-4674.

The aim of this work is to locate, collect, and compile scholarly research reports on the occurrence and characteristics of farm injury in an indexed bibliography with author's abstracts. No comprehensive checklist on the epidemiology of farm injury currently exists. The development of a thorough bibliography will fill this void and will likely stimulate research efforts directed at the causes and consequences of farm injury. Once the causes and consequences are known, appropriate interventions and policies can be developed and implemented.

55
"Epidemiology of Health and Safety Risks in Agriculture and Related Industries: Practical Applications for Rural Physicians." J.E. Zejda, H.H. McDuffie, and J.A. Dosman. *Western Journal of Medicine*, Vol. 158(1), January 1993, pp. 56-63.

The authors review the epidemiology of respiratory disorders, cancer, neurologic disorders, injuries and accidental deaths, skin problems, hearing loss, and stress. They also discuss the role of the physician in recognizing and treating these hazards.

56
"Farm Equipment Injuries in a Rural County, 1980 Through 1985: The Emergency Department as a Source of Data for Prevention." R.S. Hopkins. *Annals of Emergency Medicine,* Vol. 18(7), July 1989, pp. 758-762.

Using a community hospital's emergency department data, the author generated population-based estimates of farm equipment injuries from 1980 to 1985. The author recommends this type of surveillance system for assessing local causes of injuries and evaluating the effectiveness of injury prevention programs.

57
"The Farm Family Perception of Occupational Health: A Multistate Survey of Knowledge, Attitudes, Behaviors, and Ideas." K. Thu, K.J. Donham, D. Yoder, and L. Ogilvie. *American Journal of Industrial Medicine*, Vol. 18(4), 1990, pp. 427-31.

The authors conducted an extensive phone and mail survey to assess farm families' concerns and attitudes regarding agricultural safety and health. Their findings indicated that farmers' major concerns include stress, trauma, and respiratory problems and that they are interested in receiving health and safety services. The authors recommend that agricultural health and safety programs and policies include farmers' input.

58
"Farm Product Prices and Agricultural Safety: Connections and Consequences." T.W. Kelsey. *The Journal of Rural Health*, Vol. 8(1), Winter 1992, pp. 52-59. NAL Call No.: RA771.A1J68.

This study explores the theory that higher farm product prices lead to reduced agricultural injury rates. Using a statistical model relating prices and acres per workers to non-rollover fatal farm injuries from 1969 to 1987, the author found that economic conditions are not associated with injury rates.

59
"Farm-Related Injury Fatalities in Oklahoma, 1987-1991." J. Kelley. *Journal of the Oklahoma State Medical Association*, Vol. 87(3), March 1994, pp. 112-115.

The author reviewed Oklahoma death certificates from 1987 to 1991 to determine the frequency of serious farm injuries. There were 132 deaths during that time with over half resulting from falls. The author encourages future efforts to collect more specific farm injury data.

60
"Injuries to Farmers and Farm Families in a Dairy State." J.A. Waller. *Journal of Occupational Medicine*, Vol. 34(4), April 1992, pp. 414-421.

The author reviewed the injuries among farmers and farm families treated at two rural Vermont hospitals. Statistics on the types of injuries and methods of payment are analyzed. Most injuries occurred on dairy farms or woodlots.

61
"Injury Among Male Migrant Farm Workers in South Carolina." S. McDermott and C.V. Lee. *Journal of Community Health*, Vol. 15(5), October 1990, pp. 297-305.

The authors reviewed the records of male migrant workers in a migrant health clinic and a hospital emergency room in South Carolina to determine the impact of injury on their health. They also interviewed 116 workers living in migrant camps. Their results indicated that male migrant workers had similar work-related injury rates to other hired farm workers and that camps with poor living conditions contributed to high injury rates.

62
Michigan Agricultural Injuries and Illnesses, 1992. K.D. Rosenman, P. Brissette-Burns, and H. Doss. East Lansing, MI: Center for Michigan Agricultural Safety and Health, Michigan State University, 1993. 22 p. Available from Michigan State University, 223 A.W. Farrell Hall, Agricultural Engineering, East Lansing, MI 48824-1323, 517/353-3737.

This report estimates the annual number of injuries, illnesses, or deaths which occur among Michigan farmers. The data cover traumatic injury and death, respiratory disease, cancer, acute and chronic disease, hearing loss, repetitive trauma, and musculoskeletal disease. The authors recommend better surveillance systems and more effective prevention strategies.

63
The National Traumatic Occupational Fatalities: A Surveillance Tool for Agricultural Work-Related Deaths. John R. Myers. *Paper*, (89-9). Columbia, MO: National Institute for Farm Safety, 1989. 19 p. Available from National Institute for Farm Safety, University of Missouri-Columbia, 205 Ag Engineering Building, Columbia, MO 65211, 314/882-6385.

NIOSH began using the National Traumatic Occupational Fatalities System in 1985 to quantify the number of occupational deaths due to trauma. The author outlines the advantages and limitations of using this surveillance system to track agricultural deaths. Data from 1980-1985 are presented and discussed.

64
"A New Approach to Collecting Farm Accident Data." D.J. Murphy and M.A. Huizinga. *Journal of Safety Research*, Vol. 20(1), Spring 1989, pp. 21-29.

The authors present the findings of the "Pennsylvania Farm Labor, Tractor Use, and Farm Injury Survey" and recommend this type of personalized mail survey for collecting farm accident data.

65

"Nonfatal Farm Injuries on 117 Eastern Ontario Beef and Dairy Farms: A One-Year Study." R.J. Brison and C.W.L. Pickett. *American Journal of Industrial Medicine*, Vol. 21(5), 1992, pp. 623-636.

The authors conducted a one-year study of 117 beef and dairy farms to determine the incidence of and risk factors for farm-related injuries. They support the use of studies such as theirs in designing injury prevention programs, and they point to a need for alternate methods of farm injury data collection.

66

Opinions and Preferences on Farm Accident Data Collection and Management. Mark A. Purschwitz and William E. Field. *Paper (American Society of Agricultural Engineers)*, 88-5521. St. Joseph, MI: American Society of Agricultural Engineers, 1988. 25 p. NAL Call No.: FICHE S-72, No. 88-5521.

The authors surveyed Extension safety specialists and others working in farm safety on the collection and management of farm accident data. The survey ranked various elements of accidents in order of importance. These data will be used to develop a farm accident information system. A copy of the questionnaire is included.

67

Overview of Agricultural Accident Data Sources and Collection Systems. Mark A. Purschwitz and William E. Field. *Paper (American Society of Agricultural Engineers)*, 87-5003. St. Joseph, MI: American Society of Agricultural Engineers, 1987. 17 p. NAL Call No.: FICHE S-72, No. 87-5003.

This paper reviews national, state, and local collection systems of agricultural accident data and discusses their limitations. The authors surveyed Extension farm safety specialists on their methods of collecting this data.

68

"Perspective on Farm Accident Statistics." P. Rosenblatt and P. Lasley. *The Journal of Rural Health*, Vol. 7(1), Winter 1991, pp. 51-61. NAL Call No.: RA771.A1J68.

This article uses the results of a survey of Iowa farmers to discuss the limitations of current farm injury statistics. The findings document four categories of data generally excluded from conventional statistics: accidents that are treated at home; accidents to people who are often not included in farm accident statistics such as children and the elderly; farmers' knowledge of others' accidents and their own close calls; and, farmers' comparisons of common and uncommon causes of farm accidents.

69

"Prevalence of Chronic Diseases and Impairments Among U.S. Farmers, 1986-1990." R.M. Brackbill, L.L. Cameron, and V. Behrens. *American Journal of Epidemiology*, Vol. 139(11), June 1, 1994, pp. 1055-1065.

The authors compared the rates of chronic diseases and impairments among farmers and nonfarmers from 1986 to 1990 using National Health Interview Survey data. The data indicated that farmers are at greater risk for cardiovascular diseases, arthritis, skin cancer, hearing loss, and amputations.

70

A Review of Farm Accident Data Sources and Research. Jack L. Runyan. Washington, D.C.: Economic Research Service, U.S. Department of Agriculture, 1993. 19 p. Bibliographies and Literature of Agriculture No. 125. NAL Call No.: aZ5076.A1U54 no. 125.

The author reviewed national sources of farm accident data, including the U.S. Department of Labor and the National Safety Council. Current research on farm injuries and illnesses, farm safety education, survey

methods, and the health and safety of youth are also discussed. The author provides recommendations for future research.

71

Scope and Magnitude of Injuries in the Agricultural Workplace. Mark A. Purschwitz and William E. Field. *Paper (American Society of Agricultural Engineers)*, 87-5514. St. Joseph, MI: American Society of Agricultural Engineers, 1987. 12 p. NAL Call No.: FICHE S-72, No. 87-5514.

This paper presents an overview of the scope and magnitude of agricultural work-related accidents. The limitations of existing sources of data and the need for a more comprehensive, solid base of research are discussed.

72

"Surveillance of Agricultural Injuries in Central Wisconsin: Epidemiologic Characteristics." D. Stueland, B. Lee, and P.M. Layde. *The Journal of Rural Health*, Vol. 7(1), Winter 1991, pp. 63-71. NAL Call No.: RA771.A1J68.

Using data from an emergency room-based farm injury surveillance system over a two-year period, this report focuses on characteristics of the victims and the agents associated with their injuries. The authors recommend that this type of surveillance system accompany other systems for a more interdisciplinary approach to farm injury research.

73

"Surveillance of Fatal and Non-fatal Farm Injuries in Kentucky." L. Stallones. *American Journal of Industrial Medicine*, Vol. 18(2), 1990, pp. 223-34.

This report describes a farm injury surveillance system designed to evaluate ongoing prevention activities in education, training, and equipment design. The system used mortality data from death certificates and morbidity data from the Farm Accident Survey conducted in 1978. The author discusses the limitations of existing data and the information needs of an agricultural injury surveillance system.

74

A Survey of Farmers' Attitudes on Human Factors. Gary L. Smith. *Paper (American Society of Agricultural Engineers)*, 87-1103. St. Joseph, MI: American Society of Agricultural Engineers, 1987. 7 p. NAL Call No.: FICHE S-72, No. 87-1103.

Of the one hundred farmers surveyed in Maryland, 90% considered human error to be the most common cause of accidents, and 80% considered fatigue to have the greatest effect on operator performance. A copy of the survey is included.

75

Understanding Risk Assessment from the Epidemiologic Perspective. Robert H. McKnight and Glen H. Hetzel. *Paper (American Society of Agricultural Engineers)*, 87-5008. St. Joseph, MI: American Society of Agricultural Engineers, 1987. 9 p. NAL Call No.: FICHE S-72, No. 87-5008.

This paper describes the public health discipline of epidemiology or risk quantification. The authors encourage the use of epidemiology among agricultural safety professionals to estimate agricultural injury risk.

PUBLICATIONS: Rescue/Emergency Care

76

Accident Extrication Procedures for Farm Families. Bobby L. Tyson. Leaflet, (379). Athens, GA: Cooperative Extension Service, University of Georgia, May 1985. 11 p. NAL Call No.: 275.29 G29L.

This leaflet is designed to help individuals with basic first aid knowledge improve their response at the scene of a farm accident. It provides information on approaching an accident and stabilizing and removing the victim from machinery, storage structures, fires, and accidents involving chemicals.

77

Emergency Medical Treatment: Adults: A Handbook of What to Do in an Emergency to Keep an Adult Alive until Help Arrives. Stephen N. Vogel and David H. Manhoff. Wilmette, IL: EMT, Inc., 1991. 26 p. Distributed by RPM, Inc., P.O. Box 616, Oshkosh, WI 54902, 800/233-2122.

This manual is a handbook of emergency medical treatment for adults that covers fifteen types of emergencies. See #104 for a similar manual on emergency medical treatment for children.

78

Extinguishing Silo Fires. William C. Arble and Dennis J. Murphy. Ithaca, NY: Northeast Regional Agricultural Engineering Service, Cornell University, 1989. 14 p. NRAES, 18. Available from Northeast Regional Agricultural Engineering Service, 152 Riley-Robb Hall, Cornell University, Ithaca, NY 14853, 607/255-7654.

This manual outlines silage management and fire prevention practices on the farm. It describes fire control, safety procedures, and other concerns with conventional and oxygen-limiting fires. The causes of silo fires and the elements of good silage are also discussed.

79

Farm Accident Rescue. L. Dale Baker, William E. Field, Rollin Schneider, Clair W. Young, Robert A. Parsons, and Dennis J. Murphy. Ithaca, NY: Northeast Regional Agricultural Engineering Service, Cornell University, 1986. 35 p. NRAES, 10. Available from Northeast Regional Agricultural Engineering Service, 152 Riley-Robb Hall, Cornell University, Ithaca, NY 14853, 607/255-7654.

This handbook provides information for emergency medical and rescue personnel on a variety of farm accidents. Rescue procedures and concerns are presented for accidents involving farm machinery, structures, and chemicals. The handbook also includes rescue tool inventory guidelines, additional references, and agricultural operator control symbols.

80

First Responder's Guide to Agricultural Chemical Accidents. C.R. Foden and J.L. Weddell. Boca Raton, FL: Lewis Publishers, 1993. 526 p. NAL Call No.: TD196.A34F57 1993.

The purpose of this guide is to assist emergency personnel responding to incidents involving hazardous materials. Designed to aid the first responding officer evaluating a hazardous situation, this guide provides detailed information on over 500 agricultural chemicals.

81

First on the Scene. Dennis Murphy, John Pollock, Gary Smith, Thomas Bean, and Martin A. Sailus. Ithaca, NY: Northeast Regional Agricultural Engineering Service, Cornell University, 1989. 46 p. NRAES, 12. Available from Northeast Regional Agricultural Engineering Service, 152 Riley-Robb Hall, Cornell University, Ithaca, NY 14853, 607/255-7654.

This publication educates rural residents on what to do when arriving at the scene of a farm accident. Decision-and-action trees illustrate the procedures for accidents involving farm machinery, storage facilities, chemicals, and electrocution. It also discusses emergency care concerns, first aid supplies, and procedures for reporting accidents and shutting off diesel tractors. An emergency information sheet is included.

82

"Playing it Safe: Anatomy of a Farm Accident Rescue Training Program." J.E. McCarthy and D.T. Stueland. *Journal of Emergency Medical Services,* June 1987, pp. 56-57.

This article describes the farm accident rescue training program of the National Farm Medicine Center. The authors have compiled a list of other farm rescue programs and identified differences among existing programs.

83

Rural Rescue and Emergency Care. Rollin Schnieder, David L. Morgan, Emery W. Nelson, and Robert L. Zickler. Chicago, IL: American Academy of Orthopaedic Surgeons (AAOS), 1993. 368 p. NAL Call No.: RA645.5.R87 1993.

This textbook covers emergency procedures for a wide range of rural rescue situations. The topics include preincident planning, extrication techniques from farm machinery, rescue from confined spaces, hazardous materials, emergency medical care, and rescuer safety. Student and instructor workbooks and an instructor slide set are also available.

84

"The Spectrum of Agricultural Trauma." T. Cogbill, H. Busch, Jr., and G. Stiers. *The Journal of Emergency Medicine,* Vol. 3, 1985, pp. 205-210.

The authors studied the spectrum, management, and prevention of agricultural injuries in 375 patients during a six-year period at a level II trauma center in rural Wisconsin. Thirty-six percent of these accidents involved farm animals, 24% tractors, 15% corn pickers or augers, 8% power take-offs, 13% other farm machinery, and 4% miscellaneous causes. Although only 2% of the patients died, faster prehospital response times could have improved the outcomes for all accident victims. Safety recommendations are also included.

85

"The Spectrum of Emergency Care of Agricultural Trauma in Central Wisconsin." D.T. Strueland, T. Zoch, P. Stamas, Jr., G. Krieg, and W. Boulet. *American Journal of Emergency Medicine,* Vol. 8(6), November 1990, pp. 528-530.

The emergency department of the Marshfield Clinic and St. Joseph's Hospital collected data on all their cases of agricultural injuries over a two year period. Of the 913 individuals with agricultural injuries, 27% were under 19 years of age. Over half of the injuries involved farm machinery. The authors recommend that staffing patterns of emergency departments in rural areas reflect the peak seasons, days, and hours in which most agricultural accidents occur.

86

"Staying Alive...The Struggle to Save Farm Accident Victims." C. Tevis. *Successful Farming,* March 1990, Vol. 88(4), pp. 37-52. NAL Call No.: 6 SU12.

Using individual and community examples, this article provides a wide range of information on first aid and rescue. This information includes farm accident statistics, a farm accident IQ quiz, ten steps to take at an accident site, and ways to involve community members in providing emergency care.

87

"To the Rescue." K. Weidener. *Penn State Agriculture,* Winter 1986, pp. 2-7. NAL Call No.: S451.P4P45. This article provides background information on Penn State's Agricultural Accident and Rescue Series and gives the accounts of two handicapped farmers who continue to farm following serious accidents.

88

"Training Farm Lifesavers." R.W. Frazee. *Extension Review,* Vol. 56(3), Summer 1985, p. 42. NAL Call No.: 1 EX892EX.

This article describes a training program for emergency personnel operating in eleven County Extension Service offices in Illinois. Participants are taught how to respond to various accident scenarios and injuries and are trained in first aid procedures and extrication methods.

PUBLICATIONS: Health Education/Prevention

89
"Agricultural Injury Prevention: The Need for Greater Cooperation and Involvement." M.A. Purschwitz, B.C. Lee, and J.R. Schmelzer. *The Journal of Rural Health*, Vol. 6(3), July 1990, pp. 221-229. NAL Call No.: RA771.A1J68.

The authors stress the need for cooperation and coordination among people inside and outside the agricultural community to develop research, education, and other initiatives that can effectively reduce agricultural injuries. Steps for establishing a prevention program and a list of local, state and national organizations involved in agricultural injury prevention are included.

90
"Building Coalitions: A Community Wide Approach for Promoting Farming Health and Safety." C. Lexau, L. Kingsbury, B. Lenz, C. Nelson, and S. Voehl. *AAOHN Journal*, Vol. 41(9), September 1993, pp. 440-449.

The Occupational Health Nurses in Agricultural Communities Nurses (OHNAC) project in Minnesota uses coalition building strategies to promote prevention. The authors describe the theoretical base and the five-stage model of the community organizing process.

91
"A Case for Medical, Environmental, and Safety Screening." D.A. Emanuel. *American Journal of Industrial Medicine*, Vol. 18(4), 1990, pp. 413-419.

Although agriculture is one of the most hazardous occupations in the United States, there has been little improvement in the past 30 years, and agriculture continues to pose many health threats to farmers. Screening programs face many challenges because of the diverse nature of agriculture. Screening tests include pulmonary function studies, dust levels, serological testing, hearing testing and noise level production, and cholinesterase levels.

92
"A Case for Social Marketing and Education for Acceptance and Implementation of Preventive Health and Occupational Safety Measure Programs for Rural Communities." B.D. Rowley. *American Journal of Industrial Medicine*, Vol. 18(4), 1990, pp. 443-7.

This article explores the use of innovation and community development models in providing health and safety education in rural communities. The author recommends a community-oriented primary care approach because it involves both health professionals and the rural community.

93
Community Outreach Guidance: A Strategy for Reaching Migrant and Seasonal Farmworkers. Washington, DC: Office of Migrant Health, 1992. 53 p. Available from National Clearinghouse for Primary Care Information, 8201 Greensboro Drive, Suite 600, McLean, VA 22102, 703/821-8955, ext. 248.

This publication provides guidance to migrant health centers in implementing effective community outreach programs. It discusses the basic components of community outreach, describes successful models, and provides various forms for community outreach workers.

94
"Delivering Comprehensive Health Education Programs for Farmers in a Primary Care Setting." J.K. Hartye and N. Mathis. *The Journal of Rural Health*, Vol. 5(3), July 1989, pp. 193-200. NAL Call No.: RA771.A1J68.

This article describes the development, content, results, and follow-up of a comprehensive health

education program for farmers in western North Carolina. The evaluation indicates that the majority of participants retained useful information and incorporated behavior changes. The authors recommend designing an educational program to fit the needs of local farmers, reinforcing the material, and encouraging the development of relationships with health care providers.

95

Dress for Safety on Farm and Ranch. Linda Manikowske. *FS* (843). Brookings, SD: Cooperative Extension Service, South Dakota State University, 1985. 4 p. NAL Call No.: 275.29 So85Fs no. 843.

This bulletin provides information on the use of clothing and equipment to protect hands, feet, heads, eyes, ears, and lungs while farming.

96

"Education, Equipment Modification and Injury Control Among Farm Workers in Kentucky." L. Stallones. *Journal of Occupational Accidents,* Vol. 10, 1989, pp. 293-303.

Arguing that injury control should be the major factor in developing an agricultural injury data collection system, the author presents an intervention classification strategy using existing data from Kentucky.

97

"An Educational Intervention Program for Prevention of Occupational Illness in Agricultural Workers." K. Ferguson, C. Gjerde, C. Mutel, K. Donham, C. Hradek, K. Johansen, and J. Merchant. *The Journal of Rural Health*, Vol. 5(1), January 1989, pp. 33-47. NAL Call No.: RA771.A1J68.

This article presents the methods and results of a study that determined the attitudes, knowledge, and behavior regarding respiratory health of 198 Iowa swine confinement operators. Half of the operators participated in an educational program. The results show that these participants' knowledge of potential hazards in swine confinement significantly improved. An educational handout on human health and confinement is included.

98

"Epilogue: Agricultural Occupational and Environmental Health Policy Strategies for the Future." A. Thelin. *American Journal of Industrial Medicine*, Vol. 18(4), 1990, pp. 523-6.

This article describes the challenges of reducing hazards in the agricultural workplace. The author encourages the development of prevention programs and notes that research, education, engineering, and regulation helped Sweden significantly reduce the incidence of tractor rollover deaths, chainsaw injuries, and hearing loss.

99

"Factors Affecting Farm Safety Practices." S.R. Schafer and J.W. Kotrlik. *Journal of Safety Research,* Vol. 17(3), 1986, pp. 123-127.

The authors conducted a study of the effectiveness of a farm safety program in Beauregard Parish, Louisiana. The study involved the National Safety Council, Cooperative Extension, the Farm Bureau, and other interested agencies. The results suggest that participation in a farm safety program may result in improved safety practices.

100

"Farm Accidents and Injuries: A Review and Ideas for Prevention." C.H. Stoskopf and J. Venn. *Journal of Environmental Health*, Vol. 47(5), March/April 1985, pp. 250-252.

The authors review the findings on accidents involving tractors, augers, and corn pickers and discuss recommendations for reducing agricultural injuries. These recommendations are grouped into four categories: farm inspection, medical care, farmer education, and equipment design. The article also includes five suggestions for making farm machinery safer.

101
The Farm Safety Walkabout Handbook. Cheryl Hawk, Jane Gay, and Kelley J. Donham. Iowa City, IA: Institute of Agricultural Medicine and Occupational Health, 1992. 80 p. Available from Iowa Department of Public Health (Angie McLaughlin), Disability Prevention, Lucas State Office Building, Des Moines, IA 50319-0075, 515/242-5833.

This handbook provides information on starting a farm injury prevention program. It discusses planning, implementing, and evaluating the program as well as conducting a community survey and a farm safety audit. The handbook comes with a video and a lesson plan.

102
Injury Prevention in America: The Workplace. Anne R. Grant. Washington, D.C.: The Roscoe Pound Foundation, 1991. 65 p. Available from The Roscoe Pound Foundation, 1050 31st Street, NW, Washington, D.C., 202/965-3500, ext. 385.

This publication contains reports on three roundtable discussions, "The Deadliest Work in America: Can Farming Be Made Safer?," "Compensation and Prevention of Industrial Accidents: How Effective is the Law?," and "How Can Occupational Diseases Be Controlled?" Each report contains background information and highlights of the roundtable discussion.

103
"Iowa Agricultural Health and Safety Service Project." J. Gay, K.J. Donham, and S. Leonard. *American Journal of Industrial Medicine*, Vol. 18(4), 1990, pp. 385-389.

This article describes the Iowa Agricultural Health and Safety Service Project (IAHSSP) which was developed as a two-year, community-based program operated by the University of Iowa and funded by the state legislature. The objectives, structure, and services of the project are outlined.

104
"The Occupational Health Nurses in Agricultural Communities Program: Identifying and Preventing Agriculturally Related Illnesses and Injuries." C.L. Connon, E. Freund, and J.K. Ehlers. *AAOHN Journal*, Vol. 41(9), September 1993, pp. 422-428.

The Occupational Health Nurses in Agricultural Communities Program (OHNAC) is a national surveillance program for identifying and preventing agricultural injuries and illnesses. The data that OHNAC nurses collect on agricultural health events are used to develop prevention strategies.

105
"Occupational Health Services for Farmers." D. Emanuel, D. Draves, and G. Nycz. *American Journal of Industrial Medicine*, Vol. 18(4), 1990, pp. 149-162.

This article discusses the health needs of farm families and the availability and affordability of health care for the farming community. In addition to providing more educational programs and improved treatment, the authors recommend that the rural health care system be studied and restructured.

106
Orientation to Multicultural Health Care in Migrant Programs. Austin, TX: National Migrant Resource Program, Inc., 1988. 55 p. Available from National Clearinghouse for Primary Care Information, 8201 Greensboro Drive, Suite 600, McLean, VA 22102, 703/821-8955, ext. 248.

The purpose of this orientation guide is to furnish health care providers with information on the complex, multicultural issues involved in serving migrant and seasonal farmworkers. The guide covers basic concepts in culture and health care, migrant lifestyles, and an overview of migrant health. A list of recommended readings is included.

107
"Preventive Measures in Agricultural Settings." D.H. Cordes and D.F. Rea. *Occupational Medicine: State of*

the Art Reviews, Vol. 6(3), July-September 1991, pp. 541-550.

The authors discuss preventive strategies to reduce the number of agricultural injuries and deaths, including legislation, engineering and design, environmental health, health provider education, and farmer education. They encourage federal leadership and physician education that includes agricultural safety and health issues.

108
"Reaching the Difficult Audience: An Experiment to Provide Occupational Health Services to Farmers and Ranchers in Colorado, U.S.A." D. Sandfort. *American Journal of Industrial Medicine,* Vol. 18(4), 1990, pp. 395-403.

This article describes the evolution of the Workplace Health in Agriculture Program at Colorado State University. The focus of this program has changed from providing health and safety consultations with agribusiness to educating specific groups within the agricultural community. These targeted groups, including rural health care providers, vocational students and teachers, farm/ranch clubs, and rural emergency medical services personnel, now promote agricultural health and safety. Interest in the program's services has increased.

109
Rural Accident Prevention Bulletins. Chicago, IL: National Safety Council. 29 are listed. Most are 4 pages, 8 1/2 by 11-in., and illustrated. Available from National Safety Council, Order Department, 1121 Spring Lake Drive, Itasca, IL 60143, 800/621-7619.

Topics of these bulletins include safe handling of farm fuels, hearing protection, farm tractor safety, and safe handling of anhydrous ammonia. Some may not be reprinted after the supply is exhausted.

110
"Rural Hospitals and the Provision of Agricultural Occupational Health and Safety Services." D.S. Wakefield. *American Journal of Industrial Medicine,* Vol. 18(4), 1990, pp. 433-42.

This article discusses the hazards of the agricultural workplace and the limited safety services available for agricultural workers. A major barrier is the absence of dedicated funds for these services at many rural hospitals. The problems of implementing occupational health and safety services and the ability of rural hospitals to provide these services are also discussed.

111
"A Safety Program That Works." *Progressive Farmer,* Vol. 105(10), October 1990, pp. 22-28. NAL Call No.: S1.P7.

This article describes farm safety programs for emergency medical technicians, teenagers, and farm families. The article also discusses corporate involvement in farm safety and gives safety tips, including starting a 911 service and using rollover protective structures. A safety checklist is provided.

112
"Using the Cooperative Extension Service in Agricultural Health Education." P.A. James and R.L. Langley. *Occupational Medicine: State of the Art Reviews*, Vol. 6(3), July-September 1991, pp. 519-527.

The authors review the history of the Cooperative Extension Service (CES) and the Agromedicine Program. They discuss the history and the pro's and con's of using the CES in agricultural health education research and programming in North Carolina.

113
"Worker Protection and Safety." G. Waddle. In *1989 Oklahoma Grain Elevator Workshop Manual. Circular E,* (881). Stillwater, OK: Cooperative Extension Service, Oklahoma State University, 1989, pp. 1-5. NAL Call No.: 275.29 OK41C.

This article describes the elements of a safety and health program: management commitment, worksite analysis, hazard prevention and control, and safety

and health training. A summary of mandatory, general industry OSHA standards which apply to grain elevators is included.

PUBLICATIONS: Children/Youth

114

"Accidental Farm Injuries in Children." J.A. Swanson, M.I. Sachs, K.A. Dahlgren, and S.J. Tinguely. *American Journal of Diseases in Children*, Vol. 141, December 1987, pp. 1276-1279.

To better understand farm injuries among children, the authors reviewed 88 cases of trauma treated in the emergency room in Rochester, Minnesota, from 1974 to 1985. The ages with the greatest incidence were 3 and 13. Farm machinery was involved in the vast majority of these accidents, forty percent of which resulted in significant long-term disabilities. The article concludes with prevention strategies.

115

Accident Risk Taking Behavior and Injury Experience of Farm Youth. Robert A. Aherin and Christine M. Todd. *Paper (American Society of Agricultural Engineers)*, 89-5530. St. Joseph, MI: American Society of Agricultural Engineers, 1989. 13 p. NAL Call No.: FICHE S-72, No. 89-5530.

This paper presents the results of a study of parental behaviors and accident experiences with their children and farm machinery. The three behaviors that were evaluated were riding on a tractor with a parent during the past 12 months, operating a tractor, and allowing a child to be within 10 feet of rotating or revolving components of farm machinery. A discussion of children's developmental stages and the potential risk for accidents is included.

116

"Agricultural Injuries in Children in Central Wisconsin." D. Stueland, P. Layde, and B. Lee. *The Journal of Trauma*, Vol. 31(11), 1991, pp. 1503-1509.

The authors conducted a two-year study of agricultural injuries among children and adolescents treated at Marshfield Clinic/St. Joseph's Hospital. Adolescents experienced the most injuries, although many preschool children were injured, especially with head and neck trauma resulting from falls.

117

Childhood Agricultural Injury Prevention: Issues and Interventions from Multiple Perspectives. B.C. Lee and P.D. Gunderson, editors. Marshfield, WI: Marshfield Clinic, 1992. 58 p. Available from National Farm Medicine Center, 1000 North Oak Avenue, Marshfield, WI 54449-5790, 715/387-9298.

This publication reviews the proceedings of the Childhood Agricultural Injury Prevention Symposium which was held in April 1992. The goal of the symposium was to bring together individuals from diverse disciplines to develop recommendations for reducing childhood agricultural injuries. Numerous recommendations for action are included.

118

"Childhood Farm Injuries: A Neglected Aspect of Patient and Resident Education." R.C. Bredfeldt, A.E. Heath, J.A. Junker, and G.L. Cuddeback. *Family Medicine*, Vol. 21(3), May-June 1989, pp. 217-20.

The authors surveyed the program directors of 380 residency programs to assess how many family practice residencies include instruction on preventing childhood farm injuries. Of 332 completed questionnaires, only three reported any formal instruction on this topic, even though 102 programs stated that at least 50% of their graduates practiced in rural communities. Methods of implementing and adapting curriculum on the prevention of childhood farm injuries are included.

119

"Childhood Farm Injury: The Role of the Physician in Prevention." J.B. Paris, Jr., C.G. Howell, and R.A. Parrish. *The American Surgeon*, Vol. 54, April 1988, pp. 192-194.

This article discusses the increasing incidence of farm-machinery injuries among children and presents several case studies of children with severe farm injuries who were admitted to the Pediatric Surgery Service where the authors worked. The authors discuss preventive measures, including the education of farm families on prevention, formal instruction on the operation of farm equipment, and the application of safety devices to farm equipment.

120

Emergency Medical Treatment: Children: A Handbook of What to Do in an Emergency to Keep a Child Alive until Help Arrives. Stephen N. Vogel and David H. Manhoff. Wilmette, IL: EMT, Inc., 1989. 28 p. Distributed by RPM, Inc., P.O. Box 616, Oshkosh, WI 54902, 800/233-2122.

This manual is a handbook of emergency medical treatment for children that covers fifteen types of emergencies. There is also a handbook for infants, and both are available in Spanish.

121

"Farm Accidents in Children." T. Cogbill, H. Busch, and G. Stiers. *Pediatrics*, Vol. 76(4), October 1985, pp. 562-566. NAL Call No.: RJ1.P42.

To better define the magnitude and management of farm accidents in children, patients under 18 years of age admitted to La Crosse Lutheran Hospital in La Crosse, Wisconsin, were studied over a six and one-half year period. Of the total 105 children, 40% were involved in animal-related accidents and 46% with some type of farm machinery. The findings indicated that major injuries were managed most effectively in a regional trauma center.

122

Fatal Farm Accidents Occurring to Wisconsin Children, 1970-1984. Roger L. Tormoehlen. *Paper (American Society of Agricultural Engineers)*, 86-5514. St. Joseph, MI: American Society of Agricultural Engineers, 1986. 13 p. NAL Call No.: FICHE S-72, No. 86-5514.

The cases of 247 Wisconsin children who died in farm-related accidents were analyzed to determine the nature and characteristics of their accidents. Tractors or other farm machinery were involved in three out of four of the fatal accidents. Numerous conclusions and recommendations are provided.

123

Fatal Farm Injuries to Children. Mark Purschwitz. Marshfield, WI: Wisconsin Rural Health Research Center, 1990. 17 p. NAL Call No.: SB565.P87.

This paper reviews what is currently known about fatal farm injuries to children. Between 175 and 300 children die each year from farm accidents. The author discusses the rates, age, and calendar distributions as well as the types of fatal farm injuries to children. Policy implications and recommendations for prevention are included.

124

"Fatal Farm Injuries Among Young Children." L.R. Salmi, H.B. Weiss, P.L. Peterson, R.F. Spengler, R.W. Sattin, and H.A. Anderson. *Pediatrics*, Vol. 83(2), February 1989, pp. 267-271. NAL Call No.: RJ1.P42.

The authors reviewed death certificates of children up to age nine in Wisconsin and Illinois from 1979 to 1985 to determine how many deaths were farm-related. There were 62 deaths in Wisconsin (3.2 per 100,000) and 32 deaths in Illinois (1.2 per 100,000). Most deaths involved machinery, and the rate of death for boys was three times higher than for girls.

125

"Fatal and Nonfatal Farm Injuries to Children and Adolescents in the United States." F.P. Rivara. *Pediatrics*, Vol. 76(4), October 1985, pp. 567-573. NAL Call No.: RJ1.P42.

This study reviews nationwide data on the mortality and morbidity of children and adolescents under 19 years of age from farm accidents. The sources of these data were the National Center for Health Statistics, the National Electronic Injury Surveillance System, the

Consumer Product Safety Commission, and the 1980 Census. According to the study, farm injuries cause 300 deaths in this population and 23,500 cases of non-fatal trauma.

126
"Fatal Unintentional Injuries Among Kentucky Farm Children: 1979 to 1985." L. Stallones. *The Journal of Rural Health*, Vol. 5(3), July 1989, pp. 246-256. NAL Call No.: RA771.A1J68.

The author reviewed the death certificates of Kentucky children under 15 years old to determine the nature of unintentional, farm-related deaths from 1979 to 1985. The majority of the 57 fatal accidents involved farm machinery, drowning, or motor vehicles.

127
"For the Rest of My Life." *Farm Journal*, Vol. 113(11), September 1989, pp. 36-7. NAL Call No.: 6 F2212.

A 13-year-old boy, Devin Vannoy, and his mother and brother recount the auger accident that changed his life and describe his determination and ability to continue farming.

128
"Health Hazards to Children in Agriculture." V.A. Wilk. *American Journal of Industrial Medicine*, Vol. 24(3), September 1993, pp. 283-290.

Children who live and work on farms are exposed to numerous dangers. The author discusses mortality and morbidity data, the lack of worker protections in agriculture, workplace hazards, and the additional hazards migrant farmworker children face.

129
Health Hazards Among Migrant Farmworkers' Children in the U.S. ERIC Digest. G. Huang. Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools, January 1993. 2 p. Report No. EDO-RC-93-1. Available from ERIC/CRESS, Appalachia Educational Laboratory, P.O. Box 1348, Charleston, WV 25325, 304/347-0400.

This digest examines the health status of migrant children and recommends ways to improve their health conditions. Since many migrant children work on farms and in the fields, they are exposed to numerous agricultural hazards, including accidents, pesticide exposure, and chronic illnesses.

130
"Occupational Injuries Among Minors Doing Farm Work in Washington State: 1986 to 1989." N.J. Heyer, G. Franklin, F.P. Rivara, P. Parker, and J.A. Haug. *American Journal of Public Health*, Vol. 82(4), April 1992, pp. 557-560.

The authors reviewed workers' compensation data from 1986 to 1989 to identify occupational injuries among children in the state of Washington. Although only 7 percent of the claims were filed by minors doing farm work, their claims accounted for 36 percent of those filed by children under 14 years of age. Twenty-six percent of the farm worker claims were considered serious injuries as compared with 16 percent of all claims filed by minors.

131
"Pediatric Exposure to Agricultural Machinery: Implications for Primary Prevention." C. Hawk, K.J. Donham, and J. Gay. *Journal of Agromedicine*, Vol. 1(1), 1994, pp. 57-74.

The authors conducted a survey of Iowa farm families and children to determine risk factors for pediatric agricultural injuries. The survey included information on the off-farm employment of parents and their child care arrangements. The authors' recommendations for prevention include guidance on age-appropriate tasks and acceptable child care options.

132
"Rural Injuries." *Pediatrics*, Vol. 81(6), June 1988, pp. 902-903. NAL Call No.: RJ1.P42.

This statement of the American Academy of Pediatrics Committee on Accident and Poison Prevention reviews the magnitude of rural injuries among children and provides recommendations for prevention.

133
"Rural Youth Disability Prevention Project Survey: Results from 169 Iowa Farm Families." C. Hawk, J. Gay, and K.J. Donham. *The Journal of Rural Health*, Vol. 7(2), Spring 1991, pp. 170-179.

This article describes the Rural Youth Disability Prevention Project, a community-based, pilot project in Iowa that addresses child safety issues in agriculture. A community assessment survey was administered to assist in program development and evaluation. The authors recommend developing similar projects in other communities if the program proves successful.

134
"So That Kids Might Live." C. Tevis. *Successful Farming*, Vol. 89(5), Mid-March 1991, pp. 33-40. NAL Call No.: 6 SU12.

This article describes projects for promoting farm safety among children. The projects include a farm safety rap song, a coloring book, a first aid program, a farm hazards educational program, a day clinic, and a safety fair. Contacts for each project are provided.

135
"We Kill Too Many Farm Kids." C. Tevis. Des Moines, IA: Meredith Corporation, 1991, 16 p. Reprinted by *Successful Farming*. Available from Farm Safety 4 Just Kids, P.O. Box 458, Earlham, IA 50072, 515/758-2827.

This article provides an overview of the issues regarding farm safety for children. The author provides information on various farm safety organizations and discusses causes of accidents and barriers to safety programs. A survey of 421 readers with children 15 years old or younger assessed their attitudes towards their children working on farms.

PUBLICATIONS: Occupational Risks

Animal

136
"Airway Injury in Swine Confinement Workers." D.A. Schwartz, S.K. Landas, D.L. Lassise, L.F. Burmeister, G.W. Hunninghake, and J.A. Merchant. *Annals of Internal Medicine*, Vol. 116(8), April 1992, pp. 630-635.

The authors examined swine confinement workers to determine whether work-related respiratory symptoms indicate lung disease. The findings showed that swine confinement work is associated with asthma and bronchitis and that farmers with work-related respiratory symptoms are at risk for airway lung injury.

137
"Animals are Major Factor in Accidents on Dairy Farms." J. Pollack. *Ag Impact*, Vol. 14(10), October 1987, pp. 2-3. NAL Call No.: S544.3.N7A45.

According to a study of worker compensation claims of a sample of 4500 farms, animals were the major factor in 30 percent of the accidents. The author describes important elements of animal behavior and encourages farm workers to learn more about their animals in order to avoid unnecessary accidents.

138
"Human Health and Safety for Workers in Livestock Housing." K.J. Donham. In *Latest Developments in Livestock Housing: Seminar of the 2nd Technical Section of the Commission Internationale du Genie Rural*, International Commission of Agricultural Engineering, June 1987, pp. 86-95. NAL Call No.: SF91.I568 1987.

This article outlines the hazardous substances in livestock housing and the respiratory effects on humans. Data on the exposure thresholds of humans can be used to develop guidelines for ensuring worker safety in confinement buildings.

139
Mycobacterioses in Swine and their Significance to Public Health. B.P. Dey and Jesse Ostroff. *Bibliographies and Literature of Agriculture*, (49). Beltsville, MD: U.S. Dept. of Agriculture, 1986. 92 p. NAL Call No.: aZ5076.A1U54 no. 49.

This monograph discusses the relationship between the mycobacteria responsible for tuberculosis in humans and swine. The potential role of swine as a hazard to human health and the differences in the disease between humans and swine are discussed.

140
"Your Health: The Risks of Confinement: Blue Print Series for Top Managers." *National Hog Farmer*, Vol. 35(5), Spring 1990, 52 p. NAL Call No.: 46.8 N213.

This special issue discusses the risks of livestock confinement units, dusts and gases, evaluating air quality, protecting your hearing, preventive management controls, and selecting a respirator.

Auditory

141
"Effects of Noise and Vibration on Farm Workers." C.D. Crutchfield and S.T. Sparks. *Occupational Medicine: State of the Art Reviews*, Vol. 6(3), July-September 1991, pp. 355-369.

This article reviews the physiological effects of noise and vibration and the standards for exposure to both. According to the authors, agricultural workers often lack access to health and safety information, and medical practitioners should be aware of the effects of noise and vibration and encourage prevention.

142
"Farming in Silence." K.B. KcMahon and C. Urbain. *Farm Journal*, Vol. 112(13), November 1988, pp. 13-15. NAL Call No.: 6 F2212.

In a study of the hearing ability of 32 Iowa farmers and 26 white-collar workers, Sartori Memorial Hospital found that over half of the farmers suffered some form of hearing loss. The article discusses the causes of hearing loss on the farm and modern technology to correct these losses. A chart of the sound levels of typical farm situations is included.

143
"Hearing Loss Among High School Farm Students." S.K. Broste, D.A. Hansen, R.L. Strand, and D.T. Stueland. *American Journal of Public Health*, Vol. 79(5), May 1989, pp. 619-622. NAL Call No.: 449.9 AM3J.

The authors tested 872 vocational agriculture students in central Wisconsin over a three-year period to study levels of hearing loss among teenage farm children. Hearing loss was most prevalent among those actively involved in farming. The findings indicated that adult hearing loss may begin in childhood and is preventable through the use of hearing protection.

144
"Hearing Loss and Hearing Conservation Practices in Rural High School Students." C.M. Woodford, L.D. Lawrence, and R. Bartrug. *Agricultural Education*, Vol. 34(4), Winter 1993, pp. 77-84. NAL Call No.: S530.A4.

The purpose of this study was to determine the noise levels in high school agricultural programs and the auditory sensitivity and hearing conservation practices among students. The results indicated that the sound levels of several machines were potentially damaging and the hearing loss among these students was high. The authors encourage hearing conservation programs for rural youth.

145
"Hearing Sensitivity in Farmers." R.S. Karlovich, R.L. Wiley, T. Tweek, and D.V. Jensen. *Public Health Reports*, Vol. 103(1), January-February 1988, pp. 61-71. NAL Call No.: 151.65 P96.

The authors tested the hearing sensitivity of 534 males and 278 females in rural Wisconsin. A significant hearing loss had occurred in approximately 25% of the males by age 30 and in 50% by age 50. Less than 20% of all those surveyed used hearing protection devices consistently while farming.

146
"Noise Exposure in the Rural Setting." J.J. Holt, S.K. Broste, and D.A. Hansen. *Laryngoscope*, Vol. 103(3), March 1993, pp. 258-262.

The authors studied the noise levels of 155 tractors on 36 farms. Based on their findings, they recommend hearing protection for farmers on tractors with cabs for 3 to 4 hours and for farmers on tractors without cabs for 1.5 to 2 hours. They also encourage farmers to limit their use of radios.

147
"Occupational Hearing Loss in New York Dairy Farmers." M.E. Marvel, D.S. Pratt, L.H. Marvel, M. Regan, and J.J. May. *American Journal of Industrial Medicine*, Vol. 20(4), 1991, pp. 517-531.

The authors analyzed the hearing tests and medical and occupational histories of 49 full-time farmers to determine the effects of dairy farm noise levels. The results showed substantial high frequency hearing loss. Significant associations were found between hearing loss, years worked, and age.

Cancer

148
"Cancer Among Farmers." A. Blair and S.H. Zahm. *Occupational Medicine: State of the Art Reviews*, Vol. 6(3), July-September 1991, pp. 335-354.

The authors review epidemiologic studies of cancer among farmers and the incidence of specific cancers. Studies have shown that farmers are at greater risk for certain malignancies, including leukemia, Hodgkin's disease, and cancers of the lip, stomach, and skin. The authors encourage additional research on cancer risks in the agricultural community.

149
"Cancer and Other Causes of Death Among Male and Female Farmers From Twenty-Three States." A. Blair, M. Dosemeci, and E.F. Heineman. *American Journal of Industrial Medicine*, Vol. 23(5), May 1993, pp. 729-742.

The authors reviewed the 1984 to 1988 mortality records of farmers from 23 states to compare mortality risks by geographic region, sex, and race. Accidents, leukemia, and cancers of the lymphatic and hematopoietic systems tended to be excessive in most regions, particularly among white males.

150
"Patterns and Risks of Cancer in Farmers in Alberta." S.M. Fincham, J. Hanson, and J.Berkel. *Cancer*, Vol. 69(5), March 1, 1992, pp. 1276-1285.

To determine cancer patterns and risks among farmers in Alberta, Canada, the authors compared data since 1983 on farmers and nonfarmers with cancer. The farmers had a higher incidence of cancer of the lip and prostate and a lower incidence of malignant melanoma of the skin.

Chemical

151
"Agricultural Chemical Application Practices to Reduce Environmental Contamination." L.E. Bode. *American Journal of Industrial Medicine*, Vol. 18(4), 1990, pp. 485-9.

Improved methods of applying agricultural chemicals can reduce environmental contamination. This article discusses applicator exposure, application efficiency, and pesticides in groundwater. The author encourages providing education on the risks of pesticides as part of any rural environmental health strategy.

152
"Attitudes About Pesticide Safety." G.R. Hawkes and M.C. Stiles. *California Agriculture*, Vol. 40, May-June 1986, pp. 19-22. NAL Call No.: 100 C12CAG.

The authors conducted a study comparing pesticide experts' perceptions of the risks, costs, and benefits of pesticides with those of the California general population. Variations in risk perceptions are attributed to differences in belief systems, training and education, and miscommunication or misperception of relevant data.

153
"Chemical Hazards to Agricultural Workers." C.S. Shaver and T. Tong. *Occupational Medicine: State of the Art Reviews*, Vol. 6(3), July-September 1991, pp. 391-413.

The authors discuss various hazards to farmers from agricultural chemicals. The article focuses on chemicals other than pesticides that are used in processes on the farm, including fertilizer use, equipment use and repair, sterilization and fumigation practices, animal confinement, and the use of stored products. Pesticide usage is also discussed along with recommendations for prevention, personal protection, and decontamination.

154
"Farm Chemical Handling, Mixing, and Loading: Worker Safety and Environmental Concerns." E.C. Spurrier. In *Pesticide Formulations and Application Systems: Seventh Volume. ASTM Special Technical Publication*, (968). G.B. Beestman and D.I.B. Vander Hooven, editors. Philadelphia, PA: American Society for Testing and Materials, 1987, pp. 56-58. NAL Call No.: SB950.93.P45.

This article provides recommendations for reducing personal exposure to farm chemicals and discusses methods of reducing pesticide waste and controlling drift or off-target movement.

155

"A Hazard and Operability Study of Anydrous Ammonia Application in Agriculture." A.B. Spencer and M.G. Gressel. *American Industrial Hygiene Association Journal*, Vol. 54(11), November 1993, pp. 671-677.

The authors used the Hazard and Operability (HAZOP) analysis to determine the danger of using anhydrous ammonia in farming. Based on this analysis, the authors developed numerous recommendations to increase safety, including training, equipment design changes, preventive maintenance, and material compatibilities.

156

"Health Costs and Benefits of Fungicide Use in Agriculture: A Literature Review." E.F. Schneider and K.J. Dickert. *Journal of Agromedicine*, Vol. 1(1), 1994, pp. 19-37.

After analyzing the adverse health effects of agricultural fungicides and mycotoxins, fungal metabolites that produce toxic reactions, the authors support the careful use of fungicides as an essential agricultural tool.

157

"How Pesticides Are Handled in a Rural North Carolina County: A Survey of Farmers." C.B. Winstead. *AAOHN Journal*, Vol. 41(1), January 1993, pp. 24-32.

The author surveyed North Carolina farmers with and without pesticide certification to determine any differences in their handling of pesticides. Significant differences were found in the age of farmers and their procedures for storing chemicals and rinsing empty pesticide containers. Most farmers in the study were knowledgeable about handling pesticides safely.

158

Improving On-Target Placement of Pesticides. Bethesda, MD: Agricultural Research Institute, 1988, 220 p. NAL Call No.: SB950.93.I5.

This publication is the result of a conference co-sponsored by the Agricultural Research Institute and the U.S.D.A. Division of Science and Education. It covers closed system issues, packaging, application training, and regulatory issues.

159

"The Medical Consequences of Agricultural Chemical Exposure." D.T. Stueland. *The Marshfield Clinic Bulletin*, Vol. 2(20), Spring 1989, pp. 25-37.

This article describes the clinical effects of acute exposure to numerous classes of pesticides. The toxicologic aspects of these pesticides and the recommended methods of therapy following exposure are included.

160

Personal Protective Equipment for Pesticide Applicators: Guide to Sources. Washington, D.C.: Office of Pesticide Programs, U.S. Environmental Protection Agency, 1989. 227 p. NAL Call No.: SB952.5.P42.

Compiled with the cooperation of the National Institute for Occupational Safety and Health and the U.S. Department of Agriculture, this guide lists the following information by state: protective equipment distributors, suppliers, manufacturers, and sales representatives; sources of protective fabric; sources of gloves by fabric type; and, sources of certified respirators. A list of toll-free numbers and a glossary of terms are also included.

161

Pesticide Applicator Training Manual. Ithaca, NY: Northeastern Regional Pesticide Coordinators, 1990. 2nd edition. 290 p. NAL Call No.: SB952.863.A115P4.

Designed to help pesticide applicators prepare for a certification exam, this manual provides basic safety

and handling rules for pesticide use. Topics include federal and state laws and regulations, toxicity, environmental considerations, safety precautions, symptoms of pesticide poisoning, and first aid. Each chapter contains self-study questions. Answers to these questions and a glossary are provided at the end of the manual.

162

Pesticide Applicator Training Materials: A Bibliography. Barbara O. Stommel. *Bibliographies and Literature of Agriculture*, (106). Beltsville, MD: U.S. Dept. of Agriculture, 1991. 332 p. NAL Call No.: aZ5076.A1U54 no. 106.

This bibliography of pesticide applicator training materials is divided into numerous sections, including fumigation, private core training, agricultural workers, reference, and various types of pest control. An index of the audiovisual materials and an index of the materials in foreign languages are included.

163

Pesticide Education Manual: A Guide to Safe Use and Handling. Cynthia L. Brown and Winand K. Hock, editors. Augusta, ME: Cooperative Extension Service, University of Maine, 1989. 105 p. NAL Call No.: SB952.863.M2P4.

This manual covers topics including pest and insect management, weed control, plant health, pesticide hazards and formulations, safe use of pesticides, application equipment, and relevant federal and state laws. Each chapter contains review questions. A glossary and a chart of calculations and conversions are included.

164

"Pesticide Illness: Reporting and Prevention." K. Dervin. *Rural California Report*, Vol. 2(3), July 1990, pp. 5-6.

This article describes a California Occupational Health Program in Fresno County to improve pesticide reporting among health care providers and to link those reports to worksite follow-up. The author includes several case summaries of pesticide poisoning investigations.

165

Pesticides and Groundwater: A Guide for the Pesticide User. Martin Sailus, editor. Ithaca, NY: Northeast Regional Agricultural Engineering Service, Cornell University, 1989. 18 p. NRAES, 34. Available from Northeast Regional Agricultural Engineering Service, Cooperative Extension, 152 Riley-Robb Hall, Ithaca, NY 14853-5701, 607/255-7654.

This user guide discusses how agricultural pesticides get into groundwater, pesticide properties, site factors, and practices that increase groundwater contamination. It also covers EPA drinking water standards and the health effects of drinking contaminated water.

166

"Pesticides in Perspective." C.K. Winter. *American Nurseryman*, Vol. 169(6), March 15, 1989, pp. 113-121. NAL Call No.: 80 AM371.

The author argues that distinguishing between pesticide toxicity and the risk of pesticide exposure is an important concept in evaluating the health risks of pesticides. This article focuses on the risk of pesticide exposure.

167

"Pesticide-Related Health Problems and Farmworkers." M. Moses. *AAOHN Journal*, Vol. 37(3), March 1989, pp. 115-130.

The author reviews the scientific literature on acute and chronic health effects of pesticide exposure. Data on the relationship between pesticide exposure and cancer, reproductive outcome, and mental health are included.

168

Pesticide Safety for Farmworkers (Uso Seguro de Pesticidas para los Trabajadores del Campo). Bonnie Poli

and Sam S. Fluker. Washington, D.C.: Office of Pesticide Programs, U.S. Environmental Protection Agency, 1985. 29 p. NAL Call No.: SB952.5.P4.

Developed to supplement a slide-tape program, this English/Spanish manual provides farmworkers and employers with basic safety information on working with pesticides. Topics include symptoms of pesticide poisoning, first aid, protective clothing and equipment use, safe pesticide practices, pesticide labels, and worker protection standards. Contact information for regional offices of the Environmental Protection Agency and their Pesticide Farm Safety Program are included.

169

Pesticide Safety for Non-Certified Mixers, Loaders and Applicators (Uso Seguro de Pesticidas para Mezcladores, Cargadores y Aplicadores no Certificados). Bonnie Poli and Sam S. Fluker. Washington, D.C.: Office of Pesticide Programs, U.S. Environmental Protection Agency, 1986. 31 p. NAL Call No.: SB952.5.P65.

Similar in content to *Pesticide Safety for Farmworkers*, this English/Spanish manual was developed to supplement a slide-tape program. Information on pesticide labels, protective clothing, pesticide poisoning, and first aid is included.

170

Pesticide Safety and Training Materials Catalog. Washington, D.C.: U.S. Environmental Protection Agency, 1989. 132 p. Available from Occupational Safety Branch, Field Operations Division (H-7506C), Office of Pesticide Programs, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460, 703/305-7666.

This catalog provides information on pesticide safety and training materials available to the general public. The materials are divided into sections including disposal, storage, spills and fires, poisoning and first aid, home pesticide use, personal protection, health care providers, and material specific to farmworkers. Each entry has an information summary.

171

"Pesticides and Cancer Risks in Agriculture." O. Axelson. *Medical Oncology and Tumor Pharmacotherapy*, Vol. 4(3/4), 1987, pp. 207-217.

This article explores the relationship between pesticide use and the incidence of cancer among agricultural workers. Although mortality from cancer is generally low among farmers, studies have indicated an excess of certain types of cancer, particularly malignancies of the connective tissues. The author concludes that cancer risks are associated with certain mixtures of pesticides, but it is difficult to determine the effects of isolated compounds. Further study is recommended.

172

"Pesticides and Worker Safety." C.R. Harper and D. Zilberman. *American Journal of Agricultural Economics*, Vol. 74(1), February 1992, pp. 68-78.

The authors examine pesticide regulation using a cost-benefit analysis of the trade-offs between economic benefits and worker health safety. They recommend establishing a safe minimum standard as a starting point.

173

"Principles of Closed Systems for Handling of Agricultural Pesticides." R.W. Brazelton and N.B. Akesson. In *Pesticide Formulations and Application Systems: Seventh Volume. ASTM Special Technical Publication*, (968). G.B. Beestman and D.I.B. Vander Hooven, editors. Philadelphia, PA: American Society for Testing and Materials, 1987, pp. 15-27. NAL Call No.: SB950.93.P45.

Closed systems for applying pesticides have been shown to reduce the incidence of illnesses among pesticide mixers and loaders. This article discusses the use and design of closed systems.

174

Recognition and Management of Pesticide Poisonings. Donald P. Morgan. Washington, D.C.: U.S. Environ-

mental Protection Agency, 4th edition, 1989. 207 p. NAL Call No.: RA1270.P4M6 1989.

The purpose of this handbook is to educate health professionals on the health hazards of pesticides and provide them with emergency management procedures for short-term, acute effects of pesticide poisonings.

175
Safe Handling of Agricultural Pesticides. Bringle Jennings. *EL* (612). Little Rock, AR: Cooperative Extension Service, University of Arkansas, July 1988. 11 p. NAL Call No.: 275.29 AR4EL.

This leaflet outlines safety guidelines for choosing, handling, applying, storing, and disposing of pesticides. First aid instructions, symptoms of pesticide poisoning, and information on pesticide spills and fires are included.

176
"Update on Hospitalized Pesticide Poisonings in South Carolina, 1983-1987." S.H. Schuman, N.H. Whitlock, S.T. Caldwell, and P.M. Horton. *The Journal of the South Carolina Medical Association*, February 1989, pp. 62-66.
A survey of the medical records of 76 general care hospitals in South Carolina indicated 312 admissions for pesticide poisonings from 1983 to 1987. The number of pesticide poisonings decreased by 20% during this period. One half of these poisonings were not occupationally related.

177
Work Smart–Work Safely–with Farm Chemicals (Trabaje Concientemente–Trabaje con Cautela–Cuando Trabaje con Productos Quimicos para la Agricultura). Washington, D.C.: National Agricultural Chemicals Association, 1985. 28 p. NAL Call No.: S585.8.W6.

This booklet, written in English and Spanish, summarizes and illustrates guidelines for working with farm chemicals in the field. Safety tips for responding to pesticide exposure are included.

Dermatological

178
"Dermatologic Disorders in Agriculture." D.J. Hogan and P. Lane. *Occupational Medicine: State of the Art Reviews*, Vol. 1(2), April-June 1986, pp. 285-300.

This article provides an overview of dermatologic disorders related to agricultural work. It discusses contact dermatitis from plants, pesticides, and other causes, zoonoses from tinea, viruses and mites, and skin cancer.

179
"Pesticide-Related Dermatoses in Agricultural Workers." K. Abrams, D.J. Hogan, and H.I. Maibach. *Occupational Medicine: State of the Art Reviews*, Vol. 6(3), July-September 1991, pp. 463-492.

The authors discuss the health risks of pesticide use and cutaneous exposure to pesticides. They also review pesticide types and provide recommendations for improving the current state of pesticide-induced dermatoses, including requiring companies that are seeking pesticide registration to patch test their products.

Electrical

180
Agricultural Electrification. Truman C. Surbrook and Ray C. Mullin. Cincinnati, OH: South-Western Publishing Co., 1985. 441 p. NAL Call No.: TK4018.S85.

This textbook includes units on numerous aspects of agricultural wiring, including methods and materials, equipment grounding and bonding, phase converters and transformers, and wiring for livestock housing. Recommendations for wiring installations for specific types of farms are discussed.

181

Agricultural Wiring Handbook. Columbia, MO: National Food and Energy Council, 1993. 92 p. Available from Northeast Regional Agricultural Engineering Service, Cooperative Extension, 152 Riley-Robb Hall, Ithaca, NY 14853-5701, 607/255-7654.

This reference guide covers the planning and layout of farm wiring systems. It explains new requirements in the 1993 National Electrical Code and includes wiring plans for 14 types of farm structures.

182

"Stray Voltage: Is It Really a Problem?" L. Sass and J. Thompson. *Iowa State University Veterinarian*, Vol. 55(1), 1993, pp. 18-23.

The authors provide an overview of stray voltage on dairy farms. They also discuss the physiological and behavioral effects on cows and various ways to remove and prevent stray voltage.

183

"Techniques for Coping with Stray Voltages." R.J. Gustafson, H.A. Cloud, and V.D. Albertson. *Agricultural Engineering*, Vol. 65(12), December 1984, pp. 11-15. NAL Call No.: 58.8 AG83.

This technical article discusses three techniques for dealing with stray voltage: voltage reduction, gradient control, and isolation. A single-phase, seven-farm system with uniform loading is used as an example.

184

Workshop Stray Voltages in Agriculture. Washington, D.C.: National Rural Electric Cooperative Association, 1983. 119 p. NAL Call No.: TK4018.W67 1983.

These proceedings cover the effects of stray voltage on animals, sources of stray voltage in agriculture, diagnostic procedures for detection and measurement of stray voltage, and treatments or corrective procedures presently used for stray voltage problems. A bibliography is also included.

- A variety of free electrical safety information for children and adults is available from Electrical Safety, Box 4036, Station A, Toronto, Canada M5W 2N4.

Machinery

185

"Bright Lights for Broad Tools." L. Eichenberger. *Farm Journal*, Vol. 112(11), September 1988, pp. 20-21. NAL Call No.: 6 F2212.

This article encourages the use of better lighting and safety devices on farm equipment to decrease the number of accidents on highways involving farm machinery.

186

"Dairy Barns and Roll-Over Protection on Farm Tractors: Work Environment Impacts on the Adoption of Roll-Over Protective Structures." T. Kelsey, J.W. Dennis, and P. Jenkins. *American Journal of Industrial Medicine*, Vol. 25(4), April 1994, pp. 589-592.

This article reviews a survey conducted to determine dairy farmers' perceptions of roll-over protective structures (ROPS) on tractors. Since the authors found that one group of farmers considered ROPS-equipped tractors to be unusable for inbarn tasks, they recommend that this attitude be addressed when promoting safety.

187

"The Economic Cost of Farm Tractor Rollover Deaths in New York." T.W. Kelsey. *The Journal of Rural Health*, Vol. 8(2), Spring 1992, pp. 143-147.

The author studied the economic impact of farm tractor rollover deaths in New York and found that the average expected income lost by each death was $243,615. The total cost of these deaths to New York may be more than $2 million in lost income. The author also notes that one-third of these deaths were to non-farmers.

188
"Farm Tractors and Mandatory Roll-Over Protection Retrofits: Potential Costs of the Policy in New York." T.W. Kelsey and P.L. Jenkins. *American Journal of Public Health*, Vol. 81(7), July 1991, pp. 921-923.

The authors analyzed the proposal to offer farmers retrofit incentives for their tractors for five years and require them after ten years. The study estimated the number of tractors in New York without roll-over protective structures (ROPS) and the number of lives which could have been saved using ROPS. The authors did an economic analysis of the cost per life saved and concluded that enforcement would most likely be the largest expense.

189
Human Factors of Risk Reduction in User/Equipment Mis-Interaction. R. Lewis Hull. *Paper (American Society of Agricultural Engineers)*, 87-5002. St. Joseph, MI: American Society of Agricultural Engineers, 1987. 13 p. NAL Call No.: FICHE S-72, No. 87-5002.

Safety professionals and equipment designers are beginning to study the role of human factors in accident prevention. Risk analysis of user/equipment mis-interaction combines human factors with fundamental design principles to increase equipment safety.

190
Human Presence Activated Safety Systems for Mobile Off-Road Equipment. Karl C. Anderson and Gary L. Smith. *Paper (American Society of Agricultural Engineers)*, 88-5516. St. Joseph, MI: American Society of Agricultural Engineers, 1988. 14 p. NAL Call No.: FICHE S-72, No. 88-5516.

Designed to reduce the number of accidents involving farm machinery, Human Presence Activated Safety Systems reinforce safety behaviors but do not require human input. This paper describes several types of safety systems and discusses considerations for future research.

191
Lateral and Longitudinal Stability of ATVs. Robert R. Wright and Thomas G. Carpenter. *Paper (American Society of Agricultural Engineers)*, 87-5005. St. Joseph, MI: American Society of Agricultural Engineers, 1987. 13 p. NAL Call No.: FICHE S-72, No. 87-5005.

All-terrain vehicles (ATVs) have become increasingly popular as on-farm transportation and small tractor substitutes. The authors found in their study that three-wheel ATVs are laterally and longitudinally unstable. No definitive conclusions were made on four-wheel ATVs.

192
"Public Health Focus: Effectiveness of Rollover Protective Structures for Preventing Injuries Associated with Agricultural Tractors." *Morbidity and Mortality Weekly Report*, Vol. 42(3), January 29, 1993, pp. 57-59. NAL Call No.: RA 407.3.M56.

This article examines the efficacy and cost-effectiveness of using rollover protective structures (ROPS) on agricultural tractors. The National Institute for Occupational Safety and Health (NIOSH) estimates that adding unenclosed ROPS to tractors would cause a 71% reduction in the current number of rollover fatalities.

193
Rollover Protection Directory: A Guide to Tractor Roll Bars and Other Rollover Protective Structures. Mark A. Purschwitz and Laurence Dupuis. Marshfield, WI: Wisconsin Rural Health Research Center, 1993. 79 p. NAL Call No.: S711.G8.

This guide provides information on obtaining retrofit rollover protective structures which protect tractor operators from injury or death in rollover accidents.

194
"Scalping Accidents with Shielded PTO Units: Four Case Reports." S. Roerig. *AAOHN Journal*, Vol. 41(9), September 1993, pp. 437-439.

Four women in New York suffered scalping injuries when they became entagled in PTO units. The author, an agricultural occupational health nurse, describes her interventions, which included introducing these women to each other, coordinating a statewide investigation, and working with Cooperative Extension Service agents to notify farmers of potential dangers.

195

Summary of Accidents with Power Take-Off Driven Augers and Elevators. Terry L. Wilkinson and William E. Field. *Paper (American Society of Agricultural Engineers)*, 88-5519. St. Joseph, MI: American Society of Agricultural Engineers, 1988. 16 p. NAL Call No.: FICHE S-72, No. 88-5519.

This paper summarizes previous research on nonfatal and fatal auger and elevator power take-off accidents, provides recommendations, and discusses research currently in progress.

Respiratory

196

"Acute Symptoms Following Exposure to Grain Dust in Farming." J. Manfreda, V. Holford-Strevens, M. Cheang, and C.P.W. Warren. *Environmental Health Perspectives*, Vol. 66, April 1986, pp. 73-80.

The authors discuss a survey of 661 male and 535 female current or former farmers. The survey indicated that over one half of the males and one third of the females reported at least one acute symptom following exposure to grain dust.

197

"Aeroallergens in Dairy Barns Near Cooperstown, New York and Rochester, Minnesota." A.R. Campbell, M.C. Swanson, E. Fernandez-Caldas, C.E. Reed, J.J. May, and D.S. Pratt. *American Review of Respiratory Disorders*, Vol. 140(2), August 1989, pp. 317-320.

The air in sixteen barns in New York and Minnesota was sampled to measure various aeroallergen levels. The sources of these allergens included weeds, molds, animals, their feed, rodents, insects and mites. The authors recommend more studies of agricultural environments to better assess the level of allergens to which farmers are exposed.

198

Agricultural Respiratory Hazards Education Series. West Des Moines, IA: American Lung Association of Iowa, 1986. Available from the American Lung Association of Iowa, Attn: Agriculture Respiratory Hazards Division, 1025 Ashworth Road, Suite 410, West Des Moines, IA 50265, 515/224-0800.

This series of nine units provides an overview of agriculture-related respiratory hazards, approaches to prevention, information sources, and medical surveillance.

199

"Fatalities Attributed to Entering Manure Waste Pits – Minnesota, 1992." *Morbidity and Mortality Weekly Report*, Vol. 41(17), May 7, 1993, pp. 325-329. NAL Call No.: RA 407.3.M56.

This article summarizes the investigations into the deaths of four Minnesota farmers who died after entering manure waste pits. The investigations were done by the Minnesota Fatality Assessment Control and Evaluation (FACE) program and the National Institute for Occupational Safety and Health (NIOSH) FACE personnel.

200

"The Impact of Grain Dust on Respiratory Health." M. Chan-Yeung, D.A. Enarson, and S.M. Kennedy. *American Review of Respiratory Disease*, Vol. 145, 1992, pp. 476-487.

This article gives an overview of the health hazards associated with grain dust exposure. The authors discuss the grain-handling process, the composition and

characteristics of grain dust, and syndromes caused by grain dust exposure.

201
"Population Based Studies of Immunologic Lung Disease Among Farmers." J.J. Marx. *The Marshfield Clinic Bulletin*, Vol. 2(20), Spring 1989, pp. 38-47.

Studies of randomly selected dairy farmers in central Wisconsin indicated that respiratory disease remains a major problem and that farmer's lung disease is only one of many respiratory diseases affecting farmers. The article discusses the incidence of farmer's lung disease, organic dust toxic syndrome, and the differences between them.

202
"Presence of Endotoxins in Different Agricultural Environments." S.A. Olenchock, J.J. May, D.S. Pratt, L.A. Piacitelli, and J.E. Parker. *American Journal of Industrial Medicine*, Vol. 18, 1990, pp. 279-284.

The authors measured the levels of endotoxins, contaminants of dust from agricultural products, during bedding chopping and grain storage bin unloading. The airborne endotoxin levels from these activities are a potential hazard for respiratory disease in farm workers.

203
"Respiratory Risks Associated with Agriculture." M. Schenker, T. Ferguson, and T. Gamsky. *Occupational Medicine: State of the Art Reviews*, Vol. 6(3), July-September 1991, pp. 415-428.

This article reviews the respiratory health effects of agricultural work, including obstructive lung disease, restrictive lung disease, and organic dust toxic syndrome. The authors provide epidemiologic evidence of respiratory disease among agricultural workers and recommendations for further studies.

204
"Silo-Filler's Disease." W.W. Douglas, N.G.G. Hepper, and T.V. Colby. *Mayo Clinic Proceedings*, Vol. 64, 1989, pp. 291-304.

The authors summarized the cases of 17 patients who were examined shortly after exposure to silo gas. The article provides information on silage, silos, and the range of symptoms that can result from exposure to silo gas.

Stress

205
"Economics and Family Bereavement Following a Fatal Farm Accident." P.C. Rosenblatt and T.A. Karis. *Journal of Rural Community Psychology*, Vol. 12(2), 1993, pp. 37-51. NAL Call No.: RA790.J68.

This article examines the economic consequences of a fatal farm accident on 21 surviving family members. The authors found that economic issues become entangled with the grief process.

206
"The Epidemiology of Suicide Among Farm Residents or Workers in Five North Central States, 1980-1988." P. Gunderson, D. Donner, R. Nashold, L. Salkowicz, S. Sperry, and B. Wittman. *American Journal of Preventive Medicine*, Vol. 9, Supplement 1, 1993, pp. 26-32.

The authors analyzed suicides on Wisconsin, Minnesota, North Dakota, South Dakota, and Montana farms and ranches from 1980 to 1988. They found that farm women, children, adolescents, and farm laborers were at low risk for suicide, but farmers and ranchers were up to two times more likely to commit suicide than any other group of men.

207
"Family Distancing Following A Fatal Farm Accident." P.C. Rosenblatt and T.A. Karis. *Omega*, Vol. 28(3), April 1994, pp. 183-200.

To determine the factors that lead to family distancing, the authors interviewed 21 farm families following a fatal farm accident. They found that the contributing factors included blame, the economic aftermath, family differences in expressing grief, the unavailability of the bereaved, and tenuous in-law relationships.

208
"Family Response to the Farm Crisis: A Study in Coping." M. Van Hook. *Social Work*, Vol. 35(5), September 1990, pp. 425-431.

The author used a family crisis model to study the effects of major economic disruptions on community leaders and adult members of rural families in Iowa. She discusses family coping efforts and implications for practice.

209
"The Farm Crisis: An Analysis of Social Psychological Distress Among North Carolina Farm Operators." *American Journal of Community Psychology*, Vol. 17(4), 1989, pp. 423-441.

The authors analyzed data from a survey of North Carolina farmers during a farm crisis to determine the relationship between stress and demographics, farm structure, income, and social support variables. The authors encourage using such data for developing policy and farm crisis support programs.

210
"Farm Family Mental Health Issues." J.L. Ellis and P.R. Gordon. *Occupational Medicine: State of the Art Reviews*, Vol. 6(3), July-September 1991, pp. 493-502.

In this article the authors address the variety of mental health and behavioral issues for rural farm families. They discuss the stress in the farm environment, especially for the elderly, women, and adolescents, and the limited availability of care in rural areas.

211
Farm Stress. Clyde Eastman. *Research Report (New Mexico State University, Agricultural Experiment Station)*, 624. Las Cruces: New Mexico State University, Agricultural Experiment Station, 1988. 12 p. NAL Call No.: 100 N465R, No. 624.

The author discusses interviews with agricultural lenders and farmers to determine changes in the agricultural situation, causes of economic stress, and responses to stress. He also discusses ways to treat symptoms of stress and support farmers who continue or leave farming.

212
"Farm Stressors." K.R. Olson and R.P. Schellenberg. *American Journal of Community Psychology*, Vol. 14(5), 1986, pp. 555-569.

The authors review the literature on farm stressors, which are described as familial or extrafamilial stressors. Extrafamilial stressors, primarily financial concerns, have increased for farm families. The authors recommend educational programs, political action, and supportive social agencies, such as farm crisis hot lines and support groups.

213
"The Iowa Farm Crisis: Perceptions, Interpretations, and Family Patterns." M.P. Van Hook. *New Directions for Child Development*, No. 46, Winter 1990, pp. 71-86.

The author analyzes the farm crisis of the 1980s and its impact on rural adolescents from two Iowa agricultural counties. The author studied the effect of economic problems on these adolescents as a way to study the stress and coping abilities within rural families.

214
"Nonfatal Farm Accidents in North Dakota: A Sociological Analysis." J.M. Geller, R. Ludtke, and T. Stratton. *The Journal of Rural Health*, Vol. 6(2), April 1990, pp. 185-196. NAL Call No.: RA771.A1J68.

The authors conducted a study of the relationship between financial hardship and the likelihood of experiencing a nonfatal farm injury. The findings indicated that younger farmers with higher levels of financial stress are more likely to have accidents. The article explores possible reasons for this relationship and discusses implications for farm safety education.

215

"Reducing Stress of Farm Men and Women." N.C. Keating. *Family Relations,* Vol. 36(4), October 1987, pp. 358-363.

This article summarizes previous studies on the stressors associated with farming and presents findings from a study of stress among farm men and women in Alberta, Canada. The article also discusses implications for practitioners and encourages the development of stress management programs. This edition of *Family Relations* contains many other articles on farm stress.

Thermal and Water

216

Farm Pond Safety. Bringle Jennings, Michael A. Hedges, and Charlotte M. Fant. *EL (University of Arkansas, Fayetteville. Cooperative Extension Service)*, 585. Little Rock, AR: Cooperative Extension Service, August 1988. 8 p. NAL Call No.: 275.29 AR4LE.

This leaflet presents farm pond safety practices, gives instructions for mouth-to-mouth artificial respiration, and describes the use of lifesaving equipment and warning signs.

217

"Heat and Cold in Farm Workers." W.D. Brown. *Occupational Medicine: State of the Art Reviews*, Vol. 6(3), July-September 1991, pp. 371-389.

This article covers the principles of thermoregulation, the process of controlling heat in the body. The authors also discuss heat-induced illnesses, cold-associated illnesses, and work practices that can help agricultural workers avoid these illnesses.

218

Thermal Environment of Agricultural Workers: Environmental Stress. Charles W. Suggs. *Paper (American Society of Agricultural Engineers)*, 88-1635. St. Joseph, MI: American Society of Agricultural Engineers, 1988. 16 p. NAL Call No.: FICHE S-72, No. 88-1635.

This paper outlines agricultural workers' exposure to extreme hot and cold temperatures when farming. Heat loss, thermal indices, workloads, and clothing are discussed.

PUBLICATIONS: Rehabilitation

219

Agricultural Tools, Equipment, Machinery and Buildings for Farmers and Ranchers with Physical Disabilities. West Lafayette, IN: Breaking New Ground Resource Center, Purdue University, Vol. 2, 1991, 1992 Supplement. 400 p. Available from Breaking New Ground Resource Center, Purdue University, 1146 Agricultural Engineering Building, West Lafayette, IN 47907-1146, 800/825-4264.

This manual describes numerous methods that farmers and ranchers with disabilities have used to continue farming. Contacts for additional information are included.

220

Assistive Technology Needs Assessment of Farmers and Ranchers with Spinal Cord Injuries. West Lafayette, IN: Breaking New Ground Resource Center, Purdue University, 1992. 70 p. Available from Breaking New Ground Center, Purdue University, 1146 Agricultural Engineering Building, West Lafayette, IN 47907-1146, 800/825-4264.

This manual presents the results of a survey of farmers and ranchers with spinal cord injuries to determine their needs for rehabilitation technology.

221

"Breaking New Ground with Farmers and Ranchers Who Have Disabilities." P.B. Allen. *The Agricultural Education Magazine*, Vol. 65(9), March 1993, pp. 16-18. NAL Call No.: 275.8 AG8.

After experiencing a physical disability, farmers and ranchers can continue their professions with the assistance of organizations such as the Breaking New Ground Outreach Program. The author discusses Breaking New Ground's services and the impact of agricultural education.

222

Conducting Agricultural Worksite Assessments: A Guide for Those Providing Worksite Assessments for Farmers and Ranchers with Physical Disabilities. West Lafayette, IN: Breaking New Ground Resource Center, Purdue University, 1991. 89 p. NAL Call No.: HD7269 F3F53 1991.

Designed for the rural rehabilitation professional, this manual covers agricultural worksite assessments for farmers and ranchers with physical disabilities. It includes three assessment tools and information on preparing individual case plans.

223

Directory of Rural Assistive Technology Resources. West Lafayette, IN: Breaking New Ground Resource Center, Purdue University, 1991. 8 p. Available from Breaking New Ground Resource Center, Purdue University, 1146 Agricultural Engineering Building, West Lafayette, IN 47907-1146, 800/825-4264.

This directory provides descriptions and contact information for rural assistive technology resources. Other technical articles, including "Farming with a Visual Impairment" and "A Perfect Fit-Involving Youth Who Have Disabilities," are also available.

224

Evaluation of Self-Propelled Agricultural Machines Modified for Operators with Serious Physical Handicaps. West Lafayette, IN: Breaking New Ground Resource Center, Purdue University, 1987. 202 p. Available from Breaking New Ground Resource Center, Purdue University, 1146 Agricultural Engineering Building, West Lafayette, IN 47907-1146, 800/825-4264.

This manual is designed to help farmers with serious physical disabilities identify and evaluate modifications made to self-propelled agricultural equipment.

225

Identifying, Selecting and Implementing Assistive Technology in the Agricultural Workplace. West Lafayette, IN: Breaking New Ground Resource Center, Purdue University, 1987. 107 p. Available from Breaking New Ground Resource Center, Purdue University, 1146 Agricultural Engineering Building, West Lafayette, IN 47907-1146, 800/825-4264.

This guide provides rural rehabilitation professionals with information on identifying, selecting, and implementing assistive technology for farmers with disabilities. The topics include selecting appropriate technology, developing creative solutions to agricultural workplace barriers, and financing assistive technology.

226

Modified Agricultural Equipment: Manlifts for Farmers and Ranchers with Physical Handicaps. West Lafayette, IN: Breaking New Ground Resource Center, Purdue University, 1987. 322 p. Available from Breaking New Ground Resource Center, Purdue University, 1146 Agricultural Engineering Building, West Lafayette, IN 47907-1146, 800/825-4264.

This manual includes descriptions and evaluations of 27 modified, self-propelled agricultural machines. Information on adaptability, compatibility, maintenance requirements, method of operation, and cost estimates are provided for each lift.

227

"Rehabilitation Services – A Challenge for Rural America." W.E. Field. *The Marshfield Clinic Bulletin*, Vol. 2(20), Spring 1989, pp. 13-24.

This article reviews the prevalence of disabilities within the rural agricultural community, the need for rural rehabilitation services, the barriers to delivery, and the availability of rural rehabilitation technology resources. The author concludes that despite substantial need, too little is being done in the areas of training, research, and service.

AUDIOVISUAL MATERIALS: General Information

228
Agricultural Accidents and Rescue. University Park, PA: Division of Learning and Telecommunications, Pennsylvania State University, 1983. 12 videocassettes (VHS). 16-60 minutes each. Available from Media Services Distribution Center, Cornell University, 7-8 Research Park, Ithaca, NY 14850, 607/255-2091.

Videos in this series are entitled, "An Introduction," "Cornpickers," "Grain Combines," "Grain Storage," "Hay Baling-Conventional Baler," "Hay Baling-Large Round Baler," "Manure Storage," "Operating Tractors," "Power-Take-Off," "Silage Wagons," "Silos," and "Tractors."

229
Audio-Visuals Catalog. Lincoln, NE: Cooperative Extension Service, University of Nebraska-Lincoln, 1992. 24 p. Available from David Morgan, Department of Biological Systems Engineering, 222 L.W. Chase Hall, University of Nebraska-Lincoln, Lincoln, NE 68583-0726, 402/472-3934.

This catalog lists films, slide presentations, and videocassettes on a variety of rural safety and health topics. A brief description of each is provided.

230
FARMSAFE: Focus on Agricultural Health Series. Cooperstown, NY: Bassett Farm Safety and Health Project, 1987. 12 videocassettes (VHS). 20-60 minutes each. The series is available from Bassett Health Care, Attn: Chamberlain Center, One Atwell Road, Cooperstown, NY 13326, 607/547-6023.

The titles of these videotapes are "Agricultural Injuries and Children," "Recognizing Workplace Hazards on the Farm," "First Response to Farm Injuries," "Personal Protective Equipment," "Tractor Overturns," "Electrocution Hazards," "Job Safety Analysis: Job Instruction Training for Farmers," "Safety, On the Farm But Off the Job," Respiratory Hazards on the Farm," "Power Take Off Injuries," "Farm Family Stress," and "Economic Impact of Farm Injuries." The videotapes are available for sale or rent.

231
Farm Safety, Family Style. Cedar Rapids, IA: DowElanco, 1992. 1 videocassette (VHS). 13 minutes. Available from Farm Safety 4 Just Kids, P.O. Box 458, Earlham, IA 50072, 515/758-2827.

Designed for ages 10 to adults, this video includes candid discussions with farm families about safety concerns and the changing role of farm wives and mothers.

232
Farm Safety, A Second Chance. Cedar Rapids, IA: DowElanco, 1992. 1 videocassette (VHS). 14 minutes. Available from Farm Safety 4 Just Kids, P.O. Box 458, Earlham, IA 50072, 515/758-2827.

In this video families discuss how their lives have changed as a result of a farm-related injury or death. The interviews convey the impact that these tragedies can have.

233
Farm Safety Video. Lancaster, WI: Grant County Nurses Office, 1989. 1 videocassette (VHS). 18 minutes. Available from Grant County Health Department, 111 South Jefferson, Lancaster, WI 53813, 608/723-6416.

This video provides farm safety information and farm injury statistics for Grant County, Wisconsin. Farmers and their families, a local doctor, and the lieutenant governor are interviewed.

234
Film and Slide Set Directory on Agricultural Safety and Health. Iowa Farm Safety Council, Inc., 1988. Available from Gary L. Downey, Grinnell Mutual Rein-

surance Company, 1-80 at Highway 146, P.O. Box 790, Grinnell, IA 50112, 515/236-6121.

This brochure lists over 100 audiovisual materials on agricultural safety and health, many of which are available at no cost.

235

Health Care in the Migrant Context: A Provider Orientation. Alan McGill. Austin, TX: National Migrant Resource Program, Inc., 1988. 1 videocassette (VHS). 49 minutes. Available from National Migrant Resource Program, Inc., 1515 Capital of Texas Highway South, Suite 220, Austin, TX 78746, 512/328-7682.

This four-part video educates providers on ways that the migrant lifestyle affects their health care. The four topics are occupational and environmental factors, access to health care, educational factors, and dental factors.

236

Recognizing Workplace Hazards on the Farm. Cooperstown, NY: New York Center for Agricultural Medicine and Health, 1987. 1 videocassette (VHS). 51 minutes. Available from New York Center for Agricultural Medicine and Health, Bassett Health Care, One Atwell Road, Cooperstown, NY 13326, 607/547-6023.

In this seminar videotape, John G. Pollack of Cornell University discusses a practical approach to identifying potential farm hazards and what to do about them.

237

The Road to Quality Migrant Health. Claire J. Waring. Austin, TX: National Migrant Resource Program, Inc., 1987. 1 videocassette (VHS). 30 minutes. Available from National Migrant Resource Program, Inc., 1515 Capital of Texas Highway South, Suite 220, Austin, TX 78746, 512/328-7682.

This video was designed to teach health care providers serving farmworkers about the impact of lifestyle and culture on the provision of migrant health care.

238

Rural Health Series. Iowa City, IA: Institute of Agricultural Medicine and Occupational Health, 1983. 5 videocassettes (VHS). 17-36 minutes each. Available from the Department of Preventive Medicine, Institute of Agricultural Medicine and Occupational Health, University of Iowa, AMRF, Iowa City, IA 52242, 319/335-4438.

Intended primarily for physicians, this series covers transmission, prevention, diagnosis, and treatment of major health problems unique to agricultural workers. The titles of the videotapes are "Agricultural Trauma," "Pesticide Toxicology," "Respiratory and Skin Problems," "Zoonotic Diseases #1," and "Zoonotic Diseases #2."

- The Media Services Distribution Center of Cornell University offers an extensive collection of resources on farm safety and other agricultural topics. A list of relevant films, videotapes, audiotapes, slides and computer software is available by contacting them at 7-8 Research Park, Ithaca, NY 14850, 607/255-7660.

- Purdue University's Instructional Media Center also maintains an extensive collection of agricultural safety and health audiovisual materials. For a catalog and rental price list, write or call 1532 Stewart Center, West Lafayette, IN 47907-1532, 317/494-6742.

AUDIOVISUAL MATERIALS: Rescue/Emergency Care

239
First Response to Farm Injuries. Cooperstown, NY: New York Center for Agricultural Medicine and Health, 1987. 1 videocassette (VHS). 85 minutes. Available from New York Center for Agricultural Medicine and Health, Bassett Health Care, One Atwell Road, Cooperstown, NY 13326, 607/547-6023.

This video shows a practical approach to identifying and addressing potential dangers on the farm.

240
Reporting an Accident. Cooperstown, NY: New York Center for Agricultural Medicine and Health, 1987. 1 videocassette (VHS). 23 minutes. Available from New York Center for Agricultural Medicine and Health, Bassett Health Care, One Atwell Road, Cooperstown, NY 13326, 607/547-6023.

This video gives the correct step-by-step procedures for reporting an agricultural accident. A worksheet is included with the video.

241
Rural Rescue and Emergency Care Instructor Slide Set. Chicago, IL: American Academy of Orthopaedic Surgeons, 1993. 160 slides. Available from AAOS, P.O. Box 75838, Chicago, IL 60675-5838, 800/626-6726.

A companion to the *Rural Rescue and Emergency Care* textbook, this slide set contains key illustrations and chapter objectives. A guide with descriptions of each slide is included.

AUDIOVISUAL MATERIALS: Children/Youth

242

Child Safety on the Farm. Guelph, Ontario: Farm Safety Association, Inc., 1987. 1 videocassette (VHS). 11 minutes. Available from Order Desk, Farm Safety Association, Inc., 340 Woodlawn Road West, Suite 21-23, Guelph, Ontario, Canada N1H 7K6, 519/823-5600.

The video includes a tour of a typical Ontario farm showing the various hazards that exist. Narrated by a child, the video discusses the number of children who have had serious farm accidents.

243

Field of Danger: Children on the Farm. Stillwater, OK: Department of Engineering, Oklahoma State University, 1991. 1 videocassette (VHS). 28 minutes. Available from OSU Agricultural Communications, 111 Public Information Building, Stillwater, OK 74078-0222, 405/744-3727.

Funded by NIOSH, this video discusses many of the farm hazards for children and provides safety tips on topics including hearing loss, pesticides, machinery, water, excessive sun, grain handling and storage, electrical hazards, extra riders, and animals. It also includes *Kids Talk Farm Safety Stuff* and emergency response techniques. A 14-minute version of this videotape is also available.

244

Horse Sense 4 Kids. Stillwater, OK: Department of Engineering, Oklahoma State University, 1991. 1 videocassette (VHS). 21 minutes. Available from OSU Agricultural Communications, 111 Public Information Building, Stillwater, OK 74078-0222, 405/744-3727.

Directed towards children, this video discusses horse handling safety procedures and practices for children. Funded by Oklahoma State University and NIOSH, it covers handling and transporting horses, trail riding, preparing equipment, and dressing appropriately.

245

Kids Farm Safety Camp. Stillwater, OK: Department of Engineering, Oklahoma State University, 1991. 1 videocassette (VHS). 7 minutes. Available from OSU Agricultural Communications, 111 Public Information Building, Stillwater, OK 74078-0222, 405/744-3727.

This video presents the Farm Safety Camp, co-sponsored by the National Association of Wheat Growers, Oklahoma State University, NIOSH, and Colorado State University. The camp runs for one day, and children take part in demonstrations on farm machinery safety, horse handling, medical emergencies, and other safety topics.

246

Kids Talk Farm Safety Stuff. Cedar Rapids, IA: Dow-Elanco, 1991. 1 videocassette (VHS). 7 minutes. Available from Farm Safety for Just Kids, P.O. Box 458, Earlham, IA 50072, 515/758-2827.

This short videotape addresses farm safety from a child's point of view. Children discuss many hazards on the farm, including animals and farm equipment.

247

Farm Safety for Kids. Des Moines, IA: Meredith Video Publishing, 1989. 1 videocassette (VHS). NAL Call No.: Videocassette No. 686. 18 minutes. Available from Farm Safety 4 Just Kids, P.O. Box 458, Earlham, IA 50072, 515/758-2827.

This videotape reviews statistics on farm injuries among children and describes many farm hazards, including agricultural chemicals, farm ponds, machinery, dust, and noise. Parents are encouraged to provide adequate training and supervision to children and to give them tasks that are appropriate for their

ages. The video tests the viewer's ability to identify unsafe practices and outlines 15 steps for preventing accidents.

AUDIOVISUAL MATERIALS: Occupational Risks

Chemical

248
Always Wear the Right Stuff: Personal Pesticide Protection. Ithaca, NY: Cornell Cooperative Extension Service, 1990. 77 slides. Available from Cornell Cooperative Extension Service, Attn: Audiovisuals, Cornell University Resource Center, 7-8TP, Ithaca, NY 14850, 604/255-2090.

These slides come with a sound cassette and a script. Safe hygiene, laundering, spray equipment, and appropriate protective clothing and equipment are discussed.

249
Chasing the Sun...Siguiendo el Sol. Austin, TX: National Migrant Resource Program, Inc., 1994. 1 videocassette (VHS). 31 minutes. Available from National Migrant Resource Program, Inc., 1515 Capital of Texas Highway South, Suite 220, Austin, TX 78746, 512/328-7682.

Produced with funding from the U.S. Environmental Protection Agency, this video discusses compliance with the updated Worker Protection Standards. With English and Spanish subtitles, it covers pesticide exposure, personal protection, and regulations.

250
Chemical Safety for General Service Workers. J.W. Appling, J.A. Crawford, and J.A. Goodloe. Ithaca, NY: Cornell University, 1985. 1 videocassette (VHS). 15 minutes. Available from the Media Services Distribution Center, Cornell University, 7-8 Research Park, Ithaca, NY 14850, 607/255-2091.

This videotape is designed for anyone who works with chemicals but does not need highly technical information. Information on how chemicals enter and affect the body, symptoms of chemical exposure and injury, protective equipment and use, and emergency procedures are included. This videotape is also available as a slide set.

251
Closed Systems for Handling Liquid Pesticides: Improved Safety for Pesticide Applicators. Ithaca, NY: Cornell University AV Center, 1985. 17 minutes. Available from the Media Services Distribution Center, Cornell University, 7-8 Research Park, Ithaca, NY 14850, 607/255-2091. NAL Call No.: Slide No. 285.

This slide presentation explains the procedures for using the closed system for handling pesticides. According to the producers, the closed system is the safest method of applying chemicals currently available. A sound cassette, 71 slides, and a script are enclosed.

252
Farm Chemical Safety is in Your Hands (Rev.). Washington, D.C.: Farmland Industries, 1989. 1 videocassette (VHS). 12 1/2 minutes. Available from the National Agricultural Chemicals Association, 1156 15th Street, NW, Suite 400, Washington, DC 20005, 202/296-1585. NAL Call No.: Videocassette No. 761.

This videotape discusses toxicity, labeling information, protective clothing and equipment, and general safety behavior for using agricultural chemicals.

253
Fumigation Safety. Stillwater, OK: Department of Engineering, Oklahoma State University, 1991. 1 videocassette (VHS). 11 minutes. Available from OSU Agricultural Communications, 111 Public Information Building, Stillwater, OK 74078-0222, 405/744-3727.

Funded by Oklahoma State University and NIOSH, this video covers safety concerns involving the fumigation of grain handling facilities, including respiratory

protection from fumigants and dust, heat exhaustion, secondary inhalation, the importance of preparation, and the proper use of safety equipment.

254

Harvest of Sorrow, Farm Workers and Pesticides: Part I: Fieldworkers. San Francisco, CA: Pesticide Education Center, 1992. 1 videocassette (VHS). 30 minutes. Available from Pesticide Education Center, P.O. Box 420870, San Francisco, CA 94142-0870, 415/391-8511.

In this video, farm workers and their families describe their pesticide-related health problems, including serious poisoning, death, cancer, and birth defects. The video also discusses how pesticides enter the body, the symptoms of poisoning, and ways to minimize exposure. A 70-page training manual accompanies the video. Both are available in Spanish.

255

Harvest of Sorrow, Farm Workers and Pesticides: Part II: Mixers, Loaders, and Applicators. San Francisco, CA: Pesticide Education Center, 1992. 1 videocassette (VHS). 30 minutes. Available from Pesticide Education Center, P.O. Box 420870, San Francisco, CA 94142-0870, 415/391-8511.

Farm workers from California, Texas, and Florida discuss problems they have had mixing, loading and applying pesticides. The video describes the EPA toxicity categories, pesticide labels, and the use of proper protective clothing and equipment. A 144-page manual accompanies the video. Both are available in Spanish.

256

On-farm Ag Chemical Safety: Farm Family Chemical Safety. St. Louis, MO: Monsanto Company, 1989. 1 videocassette (VHS). 25 minutes. Available from Monsanto Company, c/o Dan Holman, 800 North Lindbergh, Mail Zone C2SB, St. Louis, MO 63167, 314/694-2789. NAL Call No.: Videocassette No. 703.

Topics of this video include 17 safe chemical handling rules, understanding labels, wearing protective clothing, assessing pesticide inventory and storage facilities on the farm, and developing an emergency response plan. The module also contains emergency checklists and other forms.

257

The Playing Field. Austin, TX: National Migrant Resource Program, Inc., 1992. 1 videocassette (VHS). 18 minutes. Available from National Migrant Resource Program, Inc., 1515 Capital of Texas Highway South, Suite 220, Austin, TX 78746, 512/328-7682.

Through the story of a migrant boy whose sister is ill from pesticide exposure, this video educates migrant children about the dangers of pesticides and how to avoid them. The video comes with a curriculum guide, pesticide education poster, and laminated bookmarks.

258

Safe Chemical Handling and Environmental Protection. St. Louis, MO: Monsanto Company, 1989. 1 videocassette (VHS). 30 minutes. Available from Monsanto Company, c/o Dan Holman, 800 North Lindbergh, Mail Zone C2SB, St. Louis, MO 63167, 314/694-2789. NAL Call No.: Videocassette No. 700.

This kit consists of a videotape, an illustrated workbook, and quiz questions and answers. Safe handling of agricultural chemicals, pesticide regulations and labels, material safety data sheets, and ways to reduce exposure and protect the environment are discussed.

259

Working Safely with Pesticides (Trabajando en una Forma Segura con Pesticidas). T. Cordell and G. Cramer. Tuscon, AZ: Agricultural Sciences Communications, College of Agriculture, University of Arizona, 1989. 1 videocassette (VHS). 35 minutes. Available from Agricultural Communications and Computer Support, College of Agriculture, University of Arizona 85719, 1750 North Park, Tuscon, AZ, 602/621-7176. NAL Call No.: Videocassette No. 926.

Also available in Spanish, this videotape gives eight tips for safe pesticide usage. Topics include protective clothing, storage and disposal methods, toxicity, and pesticide labels.

260
You Can Do It: How to Teach Pesticide Health and Safety to Farmworkers and their Families. Vashon Island, WA: Work Group on Pesticide Health and Safety, 1991. 1 videocassette (VHS). 26 minutes. Available from Work Group on Pesticide Health and Safety, P.O. Box 801, Vashon Island, WA 98070, 206/463-9000.

Designed to help employers and others teach farmworkers about pesticide safety, this video covers pesticide safety, pesticide education materials, and teaching methods. A content outline and a list of helpful hints is included with the video.

Electrical

261
Stray Voltage. Ithaca, NY: Cornell University, 1989. 1 videocassette (VHS). 13 minutes. Available from Media Services Distribution Center, Cornell University, 7-8 Research Park, Ithaca, NY 14850, 607/255-2091.

This video discusses the potential problems of stray voltage on dairy farms. It explains how and why it occurs, describes ways to detect stray voltage, and gives possible solutions.

Machinery

262
Farm Machinery Accidents. R.D. Schnieder. Lincoln, NE: Lincoln Medical Foundation Video Productions, 1987. 1 videocassette (VHS). 18 minutes. Available from David Morgan, Extension Farm Safety Specialist, University of Nebraska, Lincoln, NE 68583, 402/472-3951.

This video discusses the techniques that a rescue team uses when arriving at the scene of an accident involving farm machinery.

263
Farm Tractor Safety. Martha Stiles, I.V. Domingo, Jim Grieshop, and Bill Steinke. Davis, CA: University of California, 1993. 1 audiotape (English and Spanish) 30 minutes. Available from Department of Applied Behavioral Sciences, Cooperative Extension Service, University of California, Davis, CA 95616, 916/752-2606.

Developed for farmers and contractors who conduct safety trainings, this audiotape focuses on procedures for starting, operating, and stopping a tractor. The audiotape comes with illustrated brochures in English and Spanish and two photos.

264
John Deere Consolidated Safety Videotapes. East Moline, IL: John Deere, 1989. 1 videocassette (VHS). 84 minutes/English; 54 minutes/Spanish. DSC Order No. DKVHU89580EN (English) and DKVHU90565ES (Spanish). Available from John Deere , Distribution Service Center, 1400 13th Street, East Moline, IL 61244, 309/765-2967 or 800/522-7448.

The English version contains eleven segments addressing topics such as bypass starting, warning signs, positive safety attitudes, and safety with combines, tractors, and mowers. The Spanish version has five segments including cotton picker safety.

265
Power Take Off Injuries. Cooperstown, NY: New York Center for Agricultural Medicine and Health, 1987. 1 videocassette (VHS). 49 minutes. Available from New York Center for Agricultural Medicine and Health, Bassett Health Care, One Atwell Road, Cooperstown, NY 13326, 607/547-6023.

In this seminar videotape, William E. Field of Purdue University discusses power take off machinery and the injuries that can result from improper use.

266

Round Baler Safety Tips and Techniques for Large Round Balers. East Moline, IL: John Deere, 1991. 1 videocassette (VHS). 32 minutes. DSC Order No. DSVHA90596EN. Available from John Deere Distribution Service Center, 1400 13th Street, East Moline, IL 62144, 309/765-2967 or 800/522-7448.

This video covers safety tips and proper techniques for operating large round balers. Two farmers recount the stories of their injuries with round balers.

267

Safe Tractor and Machinery Operation. Gainesville, FL: Department of Agricultural Engineering, University of Florida, 1992. 1 videocassette (VHS). 33 minutes. Available from IFAS Publications, University of Florida, IFAS Building 664, P.O. Box 110011, Gainesville, FL 32611, 904/392-1764.

Designed for new and experienced drivers and operators, this video covers how and why accidents happen and ways to prevent them. Specific topics include tractor rollovers, bypass starting, extra riders, power-take-off safety, highway operations, and OSHA regulations.

268

Tractor Accidents – It's Not Gonna Happen to Me. Sacramento, CA: California Farm Bureau, 1990. 1 videocassette (VHS). 24 minutes. Available from Film Library, Stewart Center, Purdue University, West Lafayette, IN 47907, 317/494-6742.

This video provides information on pre-operation safety, tractor transportation safety, operation safety, emergency response procedures, and tractor rollovers.

269

Tractor Overturn, Auger, and *PTO*. Lincoln, NE: University of Nebraska, 1989. 3 videocassettes (VHS). 20-22 minutes each. Each is available from Rollin Schnieder, Extension Farm Safety Specialist, University of Nebraska, Lincoln, NE 68583, 402/472-3951.

Each of these videos discuss the techniques to use when arriving on the scene of an accident involving an overturned tractor, auger, or PTO.

AUDIOVISUAL MATERIALS: Rehabilitation

270
Arthritis and Farmers. West Lafayette, IN: Breaking New Ground Resource Center, Purdue University, 1989. 1 videocassette (VHS). 15 minutes. Available from Breaking New Ground Resource Center, Purdue University, 1146 Agricultural Engineering Building, West Lafayette, IN 47907-1146, 800/825-4264.

This video describes arthritis and its relevance to farmers. It covers medication, exercise, stress, proven and unproven remedies, joint protection, and other tips for managing arthritis. The video was designed to be used with the brochure, "Arthritis and Farmers," which is available from Breaking New Ground Resource Center and the Arthritis Foundation.

271
Farming with an Arm Amputation – Prosthetic and Worksite Modifications for Farmers with Upper Extremity Amputations. West Lafayette, IN: Breaking New Ground Resource Center, Purdue University, 1987. 1 videocassette (VHS). 58 minutes. Available from Breaking New Ground Resource Center, Purdue University, 1146 Agricultural Engineering Building, West Lafayette, IN 47907-1146, 800/825-4264.

Designed for farmers, their families, and rehabilitation professionals, this video features ten farmers who have continued farming with various levels of upper extremity amputations. The farmers discuss various techniques and modifications that they use when farming.

272
National AgrAbility Project. West Lafette, IN: Breaking New Ground Resource Center, Purdue University, 1993. 1 videocassette (VHS). 16 minutes. Available from Breaking New Ground Resource Center, Purdue University, 1146 Agricultural Engineering Building, West Lafayette, IN 47901-1146, 800/825-4264.

The National AgrAbility Project, administered by the U.S. Department of Agriculture Extension Service, assists agricultural workers with disabilities. This video discusses the services that the project offers to help these individuals continue farming.

273
Rehabilitation Technology – A Challenge for All. West Lafayette, IN: Breaking New Ground Resource Center, Purdue University, 1986. 1 videocassette (VHS). 13 minutes. Available from Breaking New Ground Resource Center, Purdue University, 1146 Agricultural Engineering Building, West Lafayette, IN 47907-1146, 800/825-4264.

This video presents information on evaluating specific rehabilitation problems and utilizing community resources and team work in problem solving.

274
Rural Assistive Technology Slide Presentation Resource. West Lafayette, IN: Breaking New Ground Resource Center, Purdue University, 1991. 134 slides. Available from Breaking New Ground Resource Center, Purdue University, 1146 Agricultural Engineering Building, West Lafayette, IN 47907-1146, 800/825-4264.

This slide presentation presents a variety of assistive technologies for farmers and ranchers with a wide range of physical disabilities.

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To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C. 20250, or call (202) 720-7327 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer.

NATIONAL AND REGIONAL AGRICULTURAL HEALTH AND SAFETY ORGANIZATIONS

- **Agency for Toxic Substances and Disease Registry (ATSDR), PHS, DHHS**
  Division of Health Education
  1600 Clifton Road, NE
  Mail Stop E33
  Atlanta, GA 30333
  404/639-6206

ATSDR, an agency of the U.S. Public Health Service, seeks to prevent or mitigate adverse human effects and diminished quality of life resulting from exposure to hazardous substances in the environment. The agency conducts activities in the areas of public health assessments, health investigations, exposure and disease registries, emergency response, toxicological profiles, health education, and applied research.

- **Agromedicine Program**
  Medical University of South Carolina
  171 Ashley Avenue
  Charleston, SC 29425
  803/792-2281

Established in 1984, the mission of the Agromedicine Program is to promote safer, healthier and more efficient production of food and fiber using the latest advances in agricultural technology, integrated pest management, and preventive medicine. The Agromedicine program offers educational materials on agricultural medicine and uses a network of consulting physicians as a local resource to communities.

- **The Alliance for a Clean Rural Environment**
  1155 15th Street, N.W., Suite 900
  Washington, DC 20005
  202/296-1585 or 800/545-5410

Alliance for a Clean Rural Environment is a national, nonprofit education organization supported by the pesticide industry. Its goal is to protect water quality from pesticide contamination by developing and disseminating educational materials that agricultural chemical users can follow to reduce or eliminate their impact on water supplies.

- **American Farm Bureau Federation**
  225 Touhy Avenue
  Park Ridge, IL 60068
  312/399-5700

The American Farm Bureau Federation is a voluntary organization whose members are farmers and ranchers and their families. Its foundation consists of more than 2,700 county Farm Bureaus which offer programs and services to farm families. State Farm Bureaus often have agricultural safety and health resources. The national office maintains a list of the state bureaus.

- **American Society of Agricultural Engineers (ASAE)**
  2950 Niles Road
  St. Joseph, MI 49085-9659
  616/429-0300

ASAE is a technical, scientific and educational society dedicated to the betterment of agriculture through improved application of engineering principles. It develops voluntary standards for agricultural industries, sponsors international conferences and symposiums, and issues many publications. ASAE is divided into nine technical areas: aquacultural engineering, bioengineering, electrical and electronic systems, food and process engineering, forest engineering, knowledge systems, power and machinery, soil and water, and structures and environment.

- **Association of Farmworker Opportunity Programs (AFOP)**
  1925 North Lynn Street, Suite 701
  Arlington, VA 22209
  703/528-4141

AFOP is the national association of farmworker organizations and state agencies that provide training and employment services to migrant and seasonal farmworkers through Job Training and Partnership Act Section 402 grants. AFOP's activities include nutrition and pesticide safety training.

- **Breaking New Ground Resource Center**
  Purdue University
  1146 Agricultural Engineering Building
  West Lafayette, IN 47907-1146
  800/865-4264 or 317/494-5088

Breaking New Ground provides information on rehabilitation technology for farmers with disabling conditions. Its resource center offers a wide variety of materials such as worksite modifications, adaptive tools and rural independent living skills. The Center has a newsletter, technical manuals, reports, and audiovisual materials. With the support of the Indiana Easter Seal Society, the Outreach Program provides rehabilitation services to rural and farm families throughout Indiana.

- **Center for Agricultural Research, Education, and Disease and Injury Prevention**
  National Farm Medicine Center
  1000 North Oak Avenue
  Marshfield, WI 54449-5790
  715/387-9298

Established in 1981 as a program of the Marshfield Medical Research Foundation, the Center works toward the resolution of disease and injury problems confronting rural Americans through research, education, and clinical and community services. Supported by NIOSH, its resources include a five-part video program and periodic updates on various farm safety topics.

- **Farmworker Justice Fund, Inc.**
  2001 S Street, NW, Suite 210
  Washington, D.C. 20009
  202/462-8192

The Farmworker Justice Fund is an advocacy organization for migrant and seasonal farmworkers that focuses on such issues as wages and working conditions, immigration rights, occupational safety and health, and access to legal services. The Fund is involved in litigation, education, monitoring, and advocacy in administrative agencies and Congress.

- **Farm Family Rehabilitation Management Program (FaRM)**
  Easter Seal Society of Iowa, Inc.
  P.O. Box 4002
  Des Moines, IA 50333
  515/289-1933

The FaRM program provides assistive technology and support services to enable disabled farmers to continue farming. Their services include worksite modification consultation, coordination of services, independent living services, information and referral, peer support, alternative agriculture exploration, a peer technology support network, an ingenuity network, and a mobile rural assistive technology unit.

- **Farm Safety Association**
  340 Woodlawn Road West
  Suite 22-23
  Guelph, Ontario N1H 7K6
  Canada
  519/823-5600

This Canadian organization, established in 1973 under the Workers' Compensation Act, provides information on a variety of farm safety issues. Its services include publications and audiovisual materials, consulting, seminars, and

research. An educational program catalog is also available.

- **Farm Safety 4 Just Kids**
  P.O. Box 458
  Earlham, IA 50072
  515/758-2827

This organization provides resource materials, programs, and establishes local chapters focused on promoting farm safety for children. Its mission is to prevent farm-related childhood injuries, health risks, and fatalities. Over 1,000 members receive the *4 Just Kids* newsletter listing developments in farm injury prevention.

- **High Plains Inter-Mountain Center for Agricultural Health and Safety (HI-CASH)**
  Colorado State University
  110 Veterinary Science Building
  Fort Collins, CO 80523
  800/622-8673 or 303/491-6151

HI-CASH is a multidisciplinary center whose goal is to reduce or eliminate the incidence of injuries, disease, and death from agricultural operations. With support from the National Institute for Occupational Safety and Health (NIOSH), the center provides technical assistance, applied research on agricultural hazards, and educational workshops and materials.

- **Migrant Health Program**
  Bureau of Primary Health Care
  Health Resources and Services Administration, PHS, DHHS
  4350 East West Highway
  7th Floor
  Bethesda, MD 20814
  301/594-4303

This Migrant Health Program oversees the activities of 105 Migrant Health Centers with 400 service delivery sites. These centers provide comprehensive primary health care to an estimated 500,000 migrant and seasonal farmworkers and their families.

- **Migrant Legal Action Program**
  2001 S Street, N.W., Suite 310
  Washington, DC 20009
  202/462-7744

This organization is a national legal support center for migrant and seasonal farmworkers which also provides technical assistance to migrant and other legal assistance programs nationwide.

- **Minnesota Center for Research in Agricultural Safety and Health (MN-CRASH)**
  Box 807 Mayo
  420 Delaware Street, S.E.
  School of Public Health
  University of Minnesota
  Minneapolis, MN 55455
  612/624-8914

The goals of MN-CRASH are to promote basic and applied research in agricultural health and safety, to improve communication among members of the academic, health care, and agricultural communities, and to disseminate information on agricultural health concerns. The Center publishes a newsletter and conducts surveys of ongoing health research projects in Minnesota.

- **National Agricultural Chemicals Association (NACA)**
  1156 15th Street, N.W.
  Suite 400
  Washington, D.C. 20005
  202/296-1585

NACA represents organizations that produce agricultural chemical products. Its publications include a bimonthly newsletter, periodic newsletters and manuals on the use of agricultural chemicals.

- **National Coalition for Agricultural Safety and Health (N-CASH)**
  1 West Armour Blvd.
  Suite 301
  Kansas City, MO 64111
  816/756-3140

N-CASH, an affiliate of the National Rural Health Association, is a forum for diverse groups and individuals interested in rural and agricultural occupational health and safety issues, as well as general environmental concerns. Services provided to members include advocacy, peer consultation and networking, meetings and seminars, and regular communications on agricultural occupational safety and health issues and trends.

- **National Easter Seal Society**
  Office of Public Affairs
  1350 New York Avenue, NW, Suite 915
  Washington, D.C. 20005
  202/347-3066

The National Easter Seal Society is a nonprofit, community-based organization serving persons of all ages with all types of disabilities. Through a nationwide affiliate network, Easter Seals serves more than one million people annually with rehabilitation services, technological assistance, prevention programs, advocacy, and public education. A number of Easter Seal societies are providing education and assistance to farmers, ranchers, and other agricultural workers and their families in cooperation with State Extension Service agencies.

- **National Institute for Occupational Safety and Health (NIOSH)**
  Technical Information Branch (TIB)
  DSDTT-IRAS
  4676 Columbia Parkway, Mail Stop C-19
  Cincinnati, OH 45226-1998
  800/356-4674

Formerly the Clearinghouse for Occupational Safety and Health Information, TIB provides technical information support for NIOSH and general information for the public. Their services include reference and referral, interlibrary loans, and information about NIOSH studies. A catalog of NIOSH publications is available upon request. NIOSH has funded the following programs:

* Centers for Agricultural Research, Education, and Disease and Injury Prevention;
* Cooperative Agreement Program for Agricultural Health Promotion System;
* Demonstration Cancer Control Projects for Farmers;
* Educational Resources for Agricultural Safety and Health;
* Farm Family Health and Hazard Survey;
* Occupational Health and Safety Surveillance Through Health Departments and Nurses in Agricultural Communities, and
* Sentinel Event Notification System for Occupational Risks.

For information on these programs, see item 2.

- **National Institute for Farm Safety (NIFS)**
  University of Missouri
  205 Ag Engineering Building
  Columbia, MO 65211
  314/882-2731

NIFS is the professional organization of agricultural health and safety specialists working toward preventing agricultural accidents through educational and scientific activities. Its members include agricultural safety professionals from industry, government, universities, Farm Bureau's and insurance companies. NIFS sponsors annual professional meetings, supports farm safety and health research, and publishes a bimonthly newsletter for members.

- **National Migrant Resource Program, Inc.**
  1515 Capitol Texas Highway South
  Suite 220
  Austin, TX 78746
  512/328-7682

NMRP provides information, technical assistance, and medical referral services to health care providers serving migrant and seasonal farmworkers. The health information NMRP distributes includes occupational safety and health resources. NMRP provides administrative support to the Migrant Clinicians Network, a national network of migrant health care providers. This network produces clinical updates and functions as a resource for its members.

- **National Pesticide Telecommunications Network**
  Department of Preventive Medicine
  TTUHSC
  Lubbock, TX 79430
  800/858-7378 or 806/743-3091
  800/858-7377 (Government & Medical Personnel Only)

A service of the Environmental Protection Agency and Texas Tech University, the network responds to non-emergency questions about the effects of pesticides, toxicology and symptoms, environmental effects, disposal and cleanup, and safe use of pesticides.

- **National Safety Council**
  Customer Service Department
  1211 Spring Lake Drive
  Itasca, IL 60143
  800/621-7619

The Council is a nonprofit, nongovernmental organization that promotes safety and health through the exchange of research, techniques and experience. Its divisions include agriculture, community safety, highway traffic safety, home, industry, labor, motor transportation, public safety, state and local safety organizations. The Council offers numerous publications, educational resources, and newsletters. There are 82 state chapters.

- **New York Center for Agricultural Medicine and Health (NYCAMH)**
  Bassett Health Care
  One Atwell Road
  Cooperstown, NY 13326
  607/547-6023

NYCAMH is a state-funded, nonprofit organization that promotes agricultural safety and health in the areas of research, education, outreach and medical care. Its services include a library, an information center, and an occupational health clinic specifically for farmers. The center offers books, journals, videotapes and personalized research.

- **New York State Rural Health and Safety Council, Inc.**
  Cornell University
  324 Riley-Robb Hall
  Ithaca, NY 14853
  607/255-0150

The Council is a nonprofit, statewide organization dedicated to preventing accidents, reducing the severity of injuries, and improving wellness in rural communities of New York State. It provides educational exhibits, research, statistical data, and audiovisual materials. Together with the Cornell Cooperative Extension, the Council offers a technology transfer program in which five professionals provide accident prevention and health programs throughout the state.

- **Occupational Safety and Health Administration (OSHA)**
  U.S. Department of Labor
  Farm Safety
  Room 3609
  200 Constitution Avenue, NW
  Washington, D.C. 20210
  202/219-7216

OSHA's mission is to ensure safe and healthful working conditions for over 90 million workers, including agricultural workers, through the en-

forcement of regulations, education and training efforts, and consultation programs. OSHA-supported consultation services, which are voluntary and free of charge, are available in all states and territories. In addition, there are ten collateral-duty OSHA Agricultural Outreach Coordinators with one in each region. They are the core OSHA field representatives in agriculture.

- **Office of Rural Health Policy**
  Health Resources and Services Administration, PHS, DHHS
  5600 Fishers Lane, Room 9-05
  Rockville, MD 20857
  301/443-0835

The Federal Office of Rural Health Policy was established in 1988 to address rural health needs nationwide. The major responsibility of the Office is to work within the Department and with other Federal agencies, States, national associations and private sector organizations to seek solutions to health care problems in rural areas. The Office addresses agricultural health and safety through a variety of activities: the Office funds Rural Health Research Centers, several of which have undertaken agricultural health and safety; and the Office staffs the National Advisory committee on Rural Health, which has made recommendations to the Secretary of the Department of Health and Human Services regarding agricultural health and safety.

- **Pesticide Education Center**
  P.O. Box 420870
  San Francisco, CA 94142-0870
  415/391-8511

Founded in 1988, the goal of the Pesticide Education Center (PEC) is to provide information on the hazards and health effects of pesticides to the public to assist them in making informed decisions. PEC develops curricular materials and provides information and services targeted to the needs of citizens and workers exposed to pesticides at work or in their homes or environment.

- **Rural and Farm Family Vocational Rehabilitation Program**
  Morrill Hall
  University of Vermont
  P.O. Box 53010
  Burlington, VT 05405-3010
  802/656-5433

A cooperative program of the University of Vermont Extension Service and the Vermont Division of Vocational and Rehabilitative Services, this program offers evaluation, counseling, and assistance in job placement to members of rural and farm families with disabilities.

- **Rural Information Center Health Service (RICHS)**
  A part of the Rural Information Center (RIC)
  U.S. Department of Agriculture
  National Agricultural Library
  Room 304
  Beltsville, MD 20705
  800/633-7701 or 301/504-5547

RICHS was created jointly by the Federal Office of Rural Health Policy and the National Agricultural Library. RICHS collects and disseminates information on rural health issues, research findings related to rural health, and innovative approaches to the delivery of rural health care services. RICHS also maintains rural health information electronically and provides customized information searches and referrals on agricultural health and safety topics. The toll-free information line is available Monday through Friday, 8:00 a.m. to 4:30 p.m., ET.

- **Rural Institute on Disabilities**
  52 Corbin Hall
  University of Montana
  Missoula, MT 59812
  406/243-5467 or 800/723-0323

The Rural Institute is an interdisciplinary center that conducts service, training, technical assistance, research, and information dissemination

activities to increase the quantity and quality of services for individuals with disabilities in rural areas. The Rural Disability Information Service provides a variety of educational materials.

- **UC Agricultural Health and Safety Center**
  University of California-Davis
  ITEH - Old Davis Road
  Davis, CA 95616
  916/752-4050

With support from NIOSH, the Center undertakes research on occupational and environmental health and safety issues in agriculture. It provides outreach to communities and organizations through service, information and education, and training for professionals and service providers. The Center sponsors a continuing series of meetings and forums and publishes a quarterly newsletter.

- **UI Center for Agricultural Disease and Injury Research, Education and Prevention (CADIREP)**
  The University of Iowa
  100 Oakdale Campus
  124 AMRF
  Iowa City, IA 52242-5000
  319/335-4415

Supported by NIOSH, the Center conducts research and trains physicians, industrial hygienists, and environmental health specialists on agricultural health and safety issues. Its outreach activities include developing educational modules targeting specific agricultural hazards and conducting community-based educational programs.

- **UI Institute of Agricultural Medicine and Occupational Health**
  The University of Iowa
  100 Oakdale Campus
  124 AMRF
  Iowa City, IA 52242-5000
  319/335-4414

Begun by the University in 1955, the Institute undertakes research, training, and outreach activities in the areas of agricultural health and safety, rural health, and occupational health. Its research programs target agricultural chemical assessment and health effects, rural injuries, agricultural and occupational lung disease, disease and injury surveillance, and rural health policy. The Institute supports training programs in occupational medicine, industrial hygiene, and environmental health. Its outreach activities include administering the Iowa Center for Agricultural Safety and Health (ICASH), a statewide consortium.

- **U.S. Environmental Protection Agency (EPA)**
  Occupational Safety Branch, 7506C
  401 M Street, SW
  Washington, D.C. 20460
  703/305-7666

The Occupational Safety Branch of EPA distributes pesticide safety educational materials, including safety handbooks, safety posters, and slide tape and video programs.

- It is also recommended that you contact a farm safety specialist with the Cooperative Extension Service. The Directory of County Agents lists county and state extension agents by location and specialty. Check your local library or order a copy from the publisher, Century Communications, Inc., 6201 Howard Street, Niles, IL 60714-3403, 708/647-1200.

United States Department of Agriculture | National Agricultural Library | Public Services Division | Beltsville, Maryland 20705

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Charges:

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- Duplication of NAL-owned microfiche – $ 5.00 for the first fiche and $ .50 for each additional fiche per title.

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Send Requests to:

USDA, National Agricultural Library
Document Delivery Services Branch,PhotoLab
10301 Baltimore Blvd., NAL Bldg.
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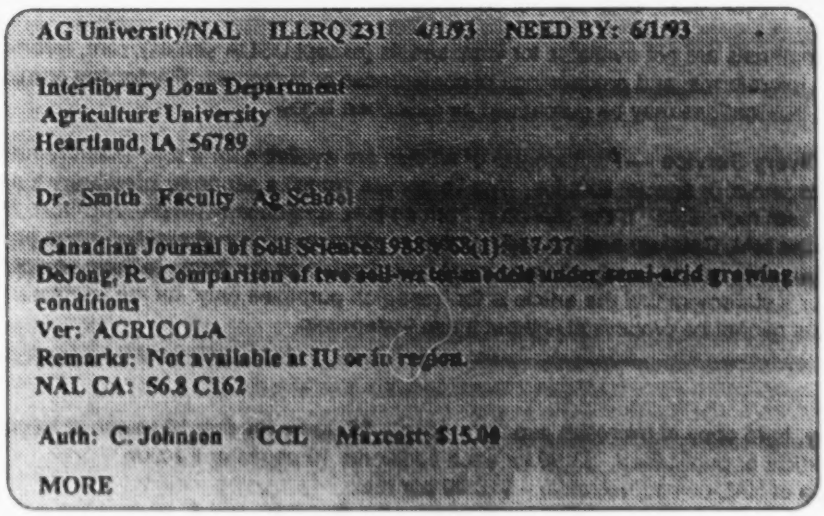
ELECTRONIC MAIL - (Sample form below)

SYSTEM	ADDRESS CODE
INTERNET	LENDING@NALUSDA.GOV
EASYLINK	62031265
ONTYME	NAL/LB
TWX/TELEX	Number is 710-828-0506 NAL LEND. This number may only be used for ILL requests.
FTS2000	A12NALLEND
OCLC	NAL's symbol AGL need only be entered once, but it must be the last entry in the Lender string. Requests from USDA and Federal libraries may contain AGL anywhere in the Lender String.

SAMPLE ELECTRONIC MAIL REQUEST


AG University/NAL ILLRQ 231 4/1/93 NEED BY: 6/1/93

Interlibrary Loan Department
Agriculture University
Heartland, IA 56789

Dr. Smith Faculty Ag School

Canadian Journal of Soil Science 1988; 52(1): 17-27
DeJong, R. Comparison of two soil-wetting agents under semi-arid growing conditions
Ver: AGRICOLA
Remarks: Not available at IU or in region.
NAL CA: S6.8 C162

Auth: C. Johnson CCL Maxcost: $15.00

MORE

TELEFACSIMILE - Telephone number is 301-504-5675. NAL accepts ILL requests via telefacsimile. Requests should be created on standard ILL forms and then faxed to NAL. NAL does not fill requests via Fax at this time.

REQUIRED DATA ELEMENTS/FORMAT

1. Borrower's address must be in block format with at least two blank lines above and below so form may be used in window envelopes.
2. Provide complete citation including verification, etc.
3. Provide authorizing official's name (request will be rejected if not included).
4. Include statement of copyright compliance if applicable.
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6. Include NAL call number if available.

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